DOCUMENT RESUME

ED 134 681 CE 008 517

AUTHOR	Lee, Connie W.; And Others
TITLE	Third Progress and Information Report of the Vocational-Technical Education Consortium of States.
INSTITUTION	Southern Association of Colleges and Schools, Atlanta, Ga. Commission on Occupational Education Institutions.
PUB DATE	Jul 76
NOTE	127p.; For related documents see CE 009 456-457
EDRS PRICE	MF-$0.83 HC-$7.35 Plus Postage.
DESCRIPTORS	Academic Standards; Administrative Organization; *Consortia; *Cooperative Planning; Educational Coordination; Models; Organization; *Performance Based Education; Program Descriptions; *Regional Programs; Research Projects; Technical Education; *Vocational Education
IDENTIFIERS	Vocational Technical Education Consortium States; V TECS

ABSTRACT

This description of major activities and accomplishments of the Vocational-Technical Education Consortium of the States (V-TECS) since the second progress report of May, 1975, is designed to provide the reader with a basic understanding of the processes and procedures used by the consortium in achieving its major goal: The production of catalogs of performance objectives, criterion-referenced measures, performance guides, and associated tool and equipment lists to serve as a basis for performance-based vocational-technical curriculum development. The report is divided into two sections: (1) The main part or narrative report and (2) a series of appendixes for those readers who want more detail on certain aspects of V-TECS. The narrative section includes six parts: (1) Introduction, (2) Organizational Structure (Southern Association of Colleges and Schools; Commission on Occupational Education Institutions; and V-TECS Board of Directors, Central Staff, and Technical Coordinators), (3) Methods and Procedures (the V-TECS model, training of State technical personnel, committee structure of the board of directors, and project survey results), (4) Project Status and Dissemination/Diffusion Planning (project completion schedule, V-TECS computerized data banks, and State diffusion strategies), (5) Research Projects (results of project grant for computer systems development, feasibility study of applicability of V-TECS materials to handicapped learners, and project conference/symposium; proposals pending by V-TECS to USOE; and application of delphi technique for V-TECS long-range planning), and (6) Information for Membership in V-TECS (period of membership and process). The appendixes include Bylaws of V-TECS; Board of Directors, Alternates, and Technical Coordinators of V-TECS, and State Directors of Vocational Education in Member States; V-TECS Staff Resumes; Members of the Committees of the V-TECS Board of Directors and the Technical Coordinators Task Force; and Analysis of D.O.T. Job Titles by Project, July, 1976. (HD)

Documents acquired by ERIC include many informal unpublished materials not available from other sources. ERIC makes every effort to obtain the best copy available. Nevertheless, items of marginal reproducibility are often encountered and this affects the quality of the microfiche and hardcopy reproductions ERIC makes available via the ERIC Document Reproduction Service (EDRS). EDRS is not responsible for the quality of the original document. Reproductions supplied by EDRS are the best that can be made from the original.

ED134681

SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS

COMMISSION ON OCCUPATIONAL EDUCATION INSTITUTIONS

VOCATIONAL-TECHNICAL EDUCATION CONSCRTIUM OF STATES

THIRD PROGRESS AND INFORMATION REPORT

OF THE

VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

CE 008 517

JULY, 1976

REPORT TRANSMITTED BY:

DR. BOB E. CHILDERS, Executive Secretary
Commission on Occupational Education Institutions
Southern Association of Colleges and Schools
795 Peachtree Street, N.E.
Atlanta, Georgia 30308

DR. BEN A. HIRST, JR., Executive Director
Vocational-Technical Education Consortium of States
Commission on Occupational Education Institutions
Southern Association of Colleges and Schools
795 Peachtree Street, N.E.
Atlanta, Georgia 30308

REPORT PREPARED BY:

DR. CONNIE W. LEE, Technical Consultant, Research Services
Vocational-Technical Education Consortium of States

IN COOPERATION WITH:

DR. BEN A. HIRST, JR., Executive Director
Vocational-Technical Education Consortium of States

DR. TONY M. HINSON, Technical Consultant, Computer Systems and Services

MR. BILLY J. KOSCHESKI, Technical Consultant, Product Development Services

MR. LeROY M. NETRICK, Technical Consultant, Statistical and Related Services

PREFACE

The Vocational-Technical Education Consortium of States (V-TECS) is a cooperative effort involving thirteen State Departments of Education, representatives of the U.S. Air Force, the U.S. Navy, and the Business/Industry/Labor Community. Through its research and development efforts, V-TECS encourages and promotes the adoption of performance-based instruction in vocational-technical education programs. To aid in attaining this goal, the Consortium produces catalogs of performance objectives, criterion-referenced measures, performance guides, and associated tool and equipment lists to serve as a basis for curriculum development. Detailed dissemination and diffusion plans are developed and implemented by member states to insure that these catalogs, along with instructions on their use and application, reach the local users.

This, the Third Progress and Information Report of V-TECS, is designed to provide the reader with a basic understanding of the processes and procedures used to develop catalogs and to discuss progress and major accomplishments made since the Second Progress Report of May, 1975. Some of the topics covered in this report include the organization and function of the new committee structure of the V-TECS Board of Directors, a listing of products currently available to the membership and the status of products under development, an overview of state diffusion strategies, a discussion of present computer capabilities and computer services provided, the results of a special research project funded by the U.S. Office of Education, and the application of the Delphi technique to V-TECS long-range planning.

Among other areas, V-TECS has developed extensive expertise in conducting basic research, developing occupational inventories, sampling and surveying job incumbents, and writing performance objectives based upon occupational task analysis procedures. This expertise is broadly based in the technical coordinators and project personnel in the V-TECS member states and is enhanced by a staff of technical experts who assist and monitor quality control for the V-TECS Board of Directors. A major effort to be undertaken this fall, is the development and implementation of a model for third-party evaluation to further refine and improve the procedures and operations of the overall Consortium effort.

TABLE OF CONTENTS

		Page
I.	INTRODUCTION	1
II.	ORGANIZATIONAL STRUCTURE	4
	A. SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS	4
	B. COMMISSION ON OCCUPATIONAL EDUCATION INSTITUTIONS	4
	C. VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES	6
	1. Board of Directors	6
	2. Central Staff	7
	3. Technical Coordinators	8
III.	METHODS AND PROCEDURES	11
	A. THE V-TECS MODEL	11
	B. TRAINING OF STATE TECHNICAL PERSONNEL	13
	C. COMMITTEE STRUCTURE OF THE BOARD OF DIRECTORS	14
	D. PROJECT SURVEY RESULTS	16
IV.	PROJECT STATUS AND DISSEMINATION/DIFFUSION PLANNING	20
	A. PROJECT COMPLETION SCHEDULE	20
	B. V-TECS COMPUTERIZED DATA BANKS	24
	C. STATE DIFFUSION STRATEGIES	25
V.	RESEARCH PROJECTS	27
	A. RESULTS OF PROJECT GRANT NUMBER O.E.G.-O-74-8581 BY V-TECS FOR U.S.O.E.--(VOCATIONAL EDUCATION RESEARCH)	27
	1. Computer Systems Development	28
	2. Feasibility Study of Applicability of V-TECS Materials to Handicapped Learners	28
	3. Project Conference/Symposium	29
	B. PROPOSALS PENDING BY V-TECS TO U.S.O.E.-- (VOCATIONAL EDUCATION RESEARCH)	29
	C. APPLICATION OF DELPHI TECHNIQUE FOR V-TECS LONG-RANGE PLANNING	30

TABLE OF CONTENTS (Continued)

		Page
VI.	INFORMATION FOR MEMBERSHIP IN V-TECS	34
	A. PERIOD OF MEMBERSHIP	34
	B. PROCESS FOR MEMBERSHIP	34
APPENDICES		
	A. BYLAWS OF V-TECS	35
	B. BOARD OF DIRECTORS, ALTERNATES, AND TECHNICAL COORDINATORS OF V-TECS AND STATE DIRECTORS OF VOCATIONAL EDUCATION IN MEMBER STATES	42
	C. V-TECS STAFF RESUMES	48
	D. MEMBERS OF THE COMMITTEES OF THE V-TECS BOARD OF DIRECTORS AND THE TECHNICAL COORDINATORS TASK FORCE	79
	E. ANALYSIS OF D.O.T. JOB TITLES BY PROJECT, JULY, 1976	81

LIST OF FIGURES

Figure		Page
1.	Geographic Map of V-TECS Membership	2
2.	Organizational Plan for V-TECS, A Consortium to Produce Performance Objectives and Criterion-Referenced Measures in Occupational Education	5
3.	V-TECS Model for Developing Catalogs of Performance Objectives and Criterion-Referenced Measures	12

LIST OF TABLES

Table		Page
1.	Response Rate and Reliability by Project	17
2.	Catalogs Completed by FY 1975-76 by V-TECS	21
3.	Catalogs to be Completed in FY 1976-77 by V-TECS	22

I. INTRODUCTION

The Vocational-Technical Education Consortium of States (V-TECS) began as a legally constituted Consortium on July 1, 1973 and has experienced steady growth and development. Membership in V-TECS is presently composed of 13 states and two associate member agencies. The member states are Alabama, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Maryland, Michigan, Mississippi, South Carolina, Tennessee, and Virginia. The two associate members are the U.S. Air Force Air Training Command, represented by the Community College of the Air Force, and the U.S. Naval Education and Training Command. A geographic map of V-TECS membership is provided in Figure 1. Several additional states and agencies are contemplating new membership during the coming fiscal year.

The primary purpose of V-TECS is to develop valid catalogs of performance objectives, criterion-referenced measures, and performance guides for learners in vocational-technical education. Methods and procedures used by V-TECS have been carefully planned and tested to provide assurances that the products developed will be of a high quality. Since uniform procedures are used throughout the Consortium, a high degree of confidence has resulted in the materials to be shared by the member states and agencies. This advantage has enhanced the transportability of products with a minimum of adaptation by user states belonging to V-TECS.

V-TECS has several secondary purposes as it develops and operates. These secondary purposes are to: (1) share research and developmental costs; (2) minimize duplication of effort in occupational analysis and curriculum development; (3) share the cost of expensive computer equipment; (4) share the cost of expensive technical personnel; (5) promote the concept of performance-based vocational-technical education with the learner as the focal point; and (6) reduce costs of materials development through improved project management techniques.

There are many peripheral benefits derived by the sharing of experiences while researching performance-based education; developing occupational inventories; conducting occupational interviews; conducting occupational surveys; and utilizing writing teams to derive performance objectives, job-based criterion-referenced measures, and performance guides. The operational nature of V-TECS

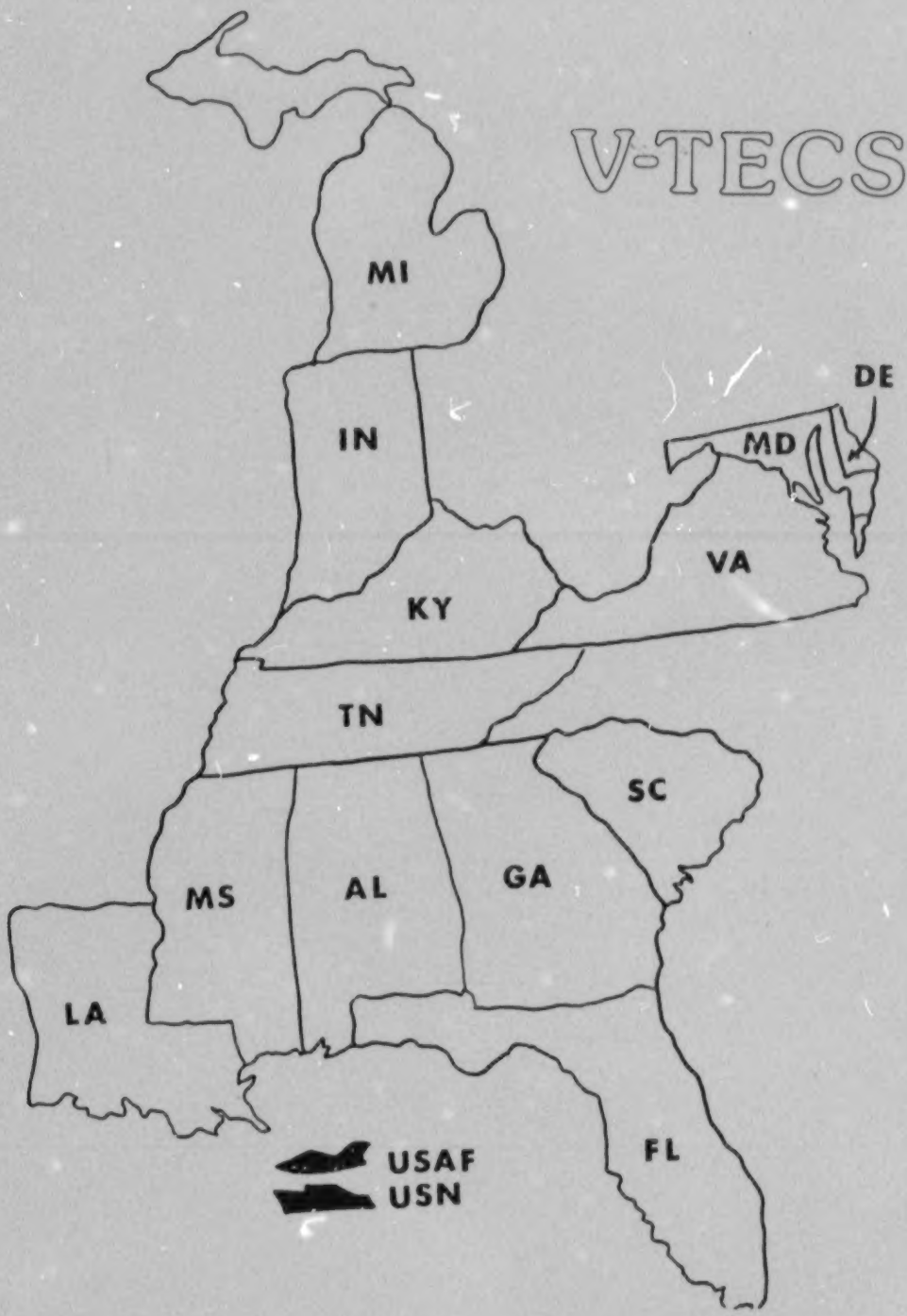

Figure 1.

Geographic Map of V-TECS Membership

has resulted in a reduction of individual state autonomy as the need for co-operation has grown in importance.

V-TECS is governed by a policy-making Board of Directors. This Board and its role and scope will be a separate topic of discussion in later sections of this report. To date, the Board has been a viable force in bringing about high-quality standards for product development and has been instrumental in the effective growth of V-TECS.

This Third Progress and Information Report describes major activities and accomplishments of V-TECS since the Second Progress Report of May, 1975. It is divided into two sections: (1) the main part or narrative of the report and (2) a comprehensive series of appendices for those readers who want more detail on certain aspects of V-TECS. Written requests for additional information or clarification of any aspects of this report may be submitted to V-TECS in care of the address on the cover of this report.

II. ORGANIZATIONAL STRUCTURE

A. Southern Association of Colleges and Schools

The administering agency of the Vocational-Technical Education Consortium of States is the Southern Association of Colleges and Schools (SACS). SACS is organized exclusively for educational purposes, and its objective is to improve education in the South through exercise of leadership and through the promotion of cooperative efforts among colleges, schools, and related agencies. Member institutions of the Southern Association are grouped into the Commission on Elementary Schools, Commission on Secondary Schools, Commission on Occupational Education Institutions, and Commission on Colleges.

B. Commission on Occupational Education Institutions

V-TECS is a project under the Commission on Occupational Education Institutions (COEI) of the Southern Association of Colleges and Schools. COEI has prime responsibility for the accreditation of those post secondary vocational-technical education institutions not covered by other commissions within the SACS structure. COEI provides regional and national leadership in its prime area of responsibility and promotes the improvement of vocational-technical and career education through various research and evaluation activities. COEI has a continuing interest in the improvement of vocational-technical education in the South and the nation.

Figure 2 illustrates the organizational structure and operational relationship of SACS/COEI/V-TECS. SACS/COEI provides a well-established and effective organizational base for V-TECS operations. The Association provides central services, technical assistance, and administrative advice to V-TECS as needed and requested by the Board of Directors or its executive officers. Fiscal controls, personnel management, auditing, and other services available to members of SACS are provided to V-TECS on a shared-cost basis.

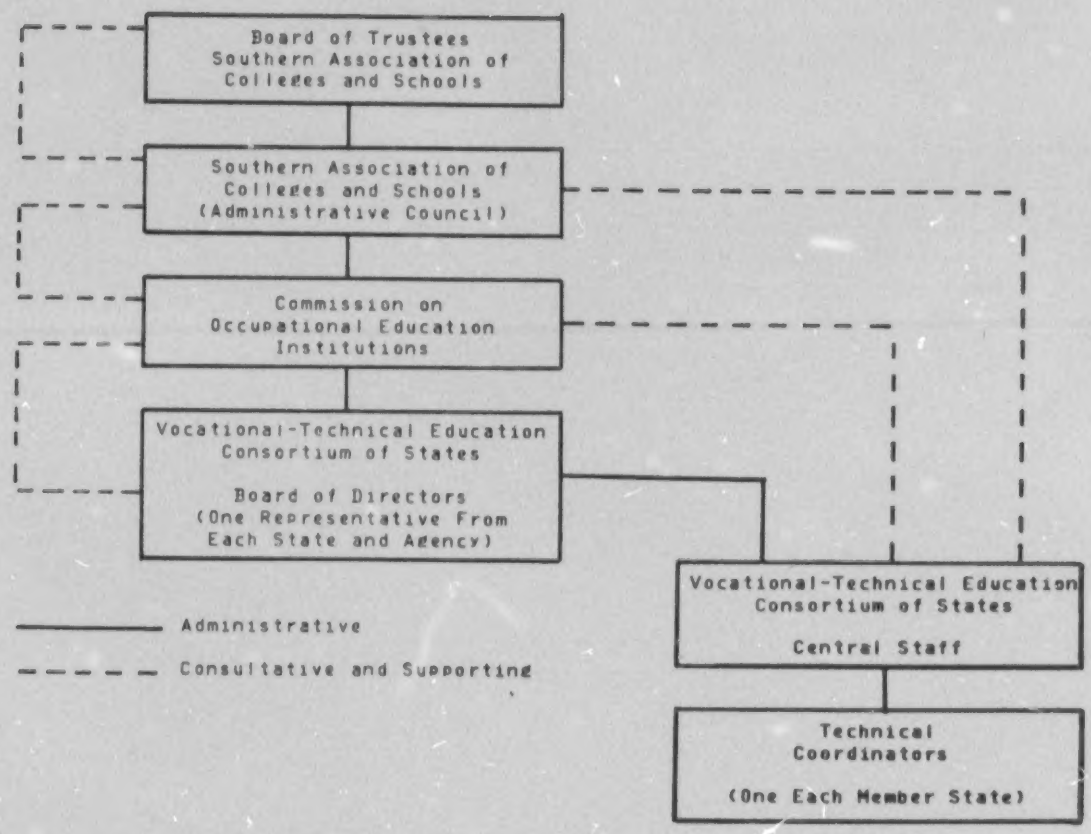

Figure 2

ORGANIZATIONAL PLAN FOR V-TECS
A CONSORTIUM TO PRODUCE PERFORMANCE OBJECTIVES AND
CRITERION-REFERENCED MEASURES IN OCCUPATIONAL EDUCATION

C. Vocational-Technical Education Consortium of States

1. Board of Directors. The Board of Directors consists of one person from each state holding membership status in V-TECS. In addition, an alternate member is named to attend meetings in the absence of the regular member. A member or alternate may cast only one vote for the participating state, although both are present during some meetings. The associate membership status held by the U.S. Air Force Air Training Command and the U.S. Naval Education and Training Command carries no voting privilege. The associate members participate in discussions, serve on committees, and provide advice and technical assistance as needed and requested by V-TECS.

The Board serves as the policy-making body for the Consortium and functions in committee roles to provide advice, technical assistance, and direction to the V-TECS Central Staff. A discussion of the committee structure employed is provided in section III of this report. The Executive Director of V-TECS is the chief administrative officer and provides direction to the V-TECS Staff and other technical personnel in keeping with Board policies and Consortium Bylaws.

Appendix "A", (buff section) of this report contains the Bylaws for V-TECS. Detailed minutes have been kept for the fourteen meetings of the V-TECS Board of Directors. These minutes are the official source of policies, procedures, and practices adopted and used in the operation of V-TECS.

The members of the V-TECS Board are appointed by the person designated in each state's Plan for Vocational Education as the State Director of Vocational Education. Appointments are for periods of time governed by the State Director of Vocational Education. Such reappointments and/or appointments of a new representative are the option of the participating state.

Members of the Board of Directors of V-TECS are as follows:

State	Board Member	Alternate
Alabama	Miss Ruth Stovall	Mr. James Kendrick
Delaware	Mrs. Rachel J. Schweitzer	Mr. W. J. Kistler
Florida	Dr. John F. Crittenden	Dr. Roy Giehls
Georgia	Dr. Paul Scott	Dr. Gene Bottoms
Indiana	Mr. Ed Hornback	Dr. Bill West
Kentucky	Dr. Bruce Carpenter	Dr. Charles D. Wade
Louisiana	Dr. Harry Boyer	Dr. Merline T. Broussard
Maryland	Mr. Warren G. Smeltzer	Dr. Robert E. Laird
Michigan	Dr. Addison Hobbs	Mr. Philip Bailey
Mississippi	Dr. James Wall	Dr. Kent Brooks
South Carolina	Dr. Emily Owens	Mr. L. L. Lewis
Tennessee	Mr. Jonah L. Fitch	Mr. Harold Gregory
Virginia	Mr. L. M. Jewell, Jr.	Dr. J. Dale Oliver

Associate Members	Board Member	Alternate
U.S. Air Force	Lt. Col. Wade R. Kilbride	Capt. Dale F. Campbell
U.S. Navy	Dr. Worth Scanland	Mr. John H. Pinning

A listing of the addresses and telephone numbers of the regular and alternate Board Members and State Directors is provided in Appendix "B" (pink section) of this report.

2. Central Staff. The V-TECS Central Staff consists of the Executive Director of V-TECS and four Technical Consultants. These staff members have substantive experience and expertise in vocational-technical education, occupational analysis, and curriculum design and implementation. Techrical expertise in the areas of research design, sampling techniques, data analysis, and computer program development is also represented. Staff Resumes are included in Appendix "C" (green section) of this report.

The primary function of the V-TECS Central Staff is to provide technical assistance and guidance to the member states in order to help assure that high-quality products are produced. To achieve the best match between staff expertise and the types of assistance required, each staff member is assigned primary or secondary responsibility for providing those services that are most compatible with his or her unique area(s) of specialization. Specifically, staff members work with the State Technical Coordinators to provide the following services to member states in accordance with the Memorandum of Agreement:

a. Technical assistance in planning V-TECS related research activities.

b. Technical assistance in the design and implementation of occupational surveys.

c. Technical assistance in the development of catalogs of performance objectives, criterion-referenced measures, and performance guides.

d. Conduct individual training and in-service training workshops for the state Technical Coordinators in directing, managing, and monitoring V-TECS projects.

e. Develop and implement a system for computer storage and retrieval of the occupational survey data and catalog data.

f. Analysis of data and dissemination of special statistical computer reports.

g. Coordinate the design and implementation of dissemination and diffusion activities.

In addition, the following support activities are functions performed by the V-TECS Central Staff:

a. Conduct research in the areas of performance objectives, criterion-referenced measures, and educational consortia.

b. Develop coalitions with business, industry, and other public and/or private agencies or foundations to support efforts of V-TECS.

3. Technical Coordinators in the Member States. The Technical Coordinator in each state belonging to the Consortium has two primary functions which are: (1) to act as liaison between the state projects and the Consortium Staff and (2) to serve as a technical resource person for project personnel within the state. The Technical Coordinator has a key role in the success of projects in a particular state. The preparation and training of this person is vital to the proper functioning of the Consortium and, in particular, the activities within the state. Administratively, the Technical Coordinators are responsible to an administrator in the state but are expected to be responsive to the Consortium Staff.

One of the most important tasks of the Technical Coordinators is that of preparing personnel within their respective states, so that catalog quality is high and content comprehensive. In order to do this, the Technical Coordinator conducts training sessions for the project directors and writing teams, echoing guidance received during professional development workshops conducted by the V-TECS Staff. When local workshops are impractical because of geography, etc., every effort is made to include these personnel in V-TECS conducted training sessions. If neither approach is practical, "one-on-one" training is effected which provides for the Technical Coordinator to meet with individual project directors/writing team members as schedules permit.

a. Duties and Responsibilities Within the State. Within the state, the Technical Coordinator provides these services and performs the following functions:

(1) Monitors projects in developing catalogs of performance objectives and criterion-referenced measures in accordance with the Memorandum of Agreement.

(2) Serves as a resource person for project personnel within the state during Domain Study activities.

(3) Reviews all reports and products developed within the state to assure that quality criteria have been met.

(4) Supervises the survey of incumbent workers (follow-up activities only) inside the state to assist in obtaining adequate responses to the occupational inventory.

(5) Serves as a resource person for the interpretation of task analysis data to personnel within the state.

(6) Assists in the preparation and training of personnel serving on writing teams to convert task analysis data and task statements to performance objectives.

(7) Provides technical assistance to project directors, so that products are delivered on time and meet acceptable quality standards.

(8) Provides technical advice and assistance to personnel in the state during the field test, field utilization studies and implementation phases of the catalogs.

(9) Assists in the development of the state's dissemination plan and in-service training plan for implementing the use of the catalogs of performance objectives and criterion measures.

b. Responsiveness to the Consortium Staff. The Consortium Staff has Technical Consultants whose primary responsibility is to work with and to assist the Technical Coordinators in the member states. The working relationships of these people must be rather close, so that an acceptable quality level of pro-

ducts, training of personnel, and procedures used to develop catalogs can be maintained. In view of these key items, the Technical Coordinators in each state are expected to be responsive to the Consortium Staff as follows:

(1) Participate in all training programs, seminars, and conferences developed and conducted by the Consortium.

(2) Attend other specialized training sessions, courses, conferences, and seminars prescribed by the Board of Directors of V-TECS.

(3) Serve as a technical resource person to projects within the state and make necessary reports required under provisions of the Memorandum of Agreement.

(4) Review all reports and products produced in the state through its project efforts prior to submitting to the V-TECS Staff.

(5) Provide periodic progress reports of projects to the V-TECS Staff at intervals set by the Board of Directors of V-TECS.

A listing of the names, titles, and mailing addresses of the Technical Coordinators is included in Appendix "B" (pink section) of this report.

III. METHODS AND PROCEDURES

V-TECS develops the projects through a consistently applied procedure in each member state. The products to be delivered and which lead to the final catalogs are carefully reviewed and developed in terms of methodology and format. This uniform procedure will improve the confidence level and transportability of V-TECS products within and between the participating states. The topics under this section of the report provide information regarding the efforts of V-TECS to insure a high degree of confidence in products being developed and in transportability of the products.

A. The V-TECS Model

A comprehensive model was developed by V-TECS for use by all states. The model consists of 12 major activities and 47 sub-activities. Some activities include project identification; project planning; training of technical personnel; state-of-the-art research; developing survey instruments; surveying job incumbents; preparing field review catalogs of performance objectives, criterion-referenced measures and performance guides; developing in-service, dissemination and diffusion plans; revising and updating information; and third-party evaluation for self-renewal.

The V-TECS model was developed and based upon a thorough study of the experiences of the states of Alabama, Florida, Michigan, Utah, Massachusetts (Project CAREER), and upon other agency activity including the U.S. Air Force Air Training Command and the Education Testing Service of Princeton, New Jersey. An a priori model was derived from the study and submitted to a nationally selected jury of experts using the Delphi Technique. The jury of experts added sub-activities, deleted sub-activities, and provided input which led to the sequencing of the sub-activities of the V-TECS Model. The jury provided information concerning the relative importance of each sub-activity under realistic and idealistic constraints. The study has been published by the Southern Association of Colleges and Schools, Commission on Occupational Education Institutions. A diagram of the model, illustrating the sequencing of the 12 major activities, is shown in Figure 3. A comprehensive research report including details on the development of the V-TECS model is available upon request.

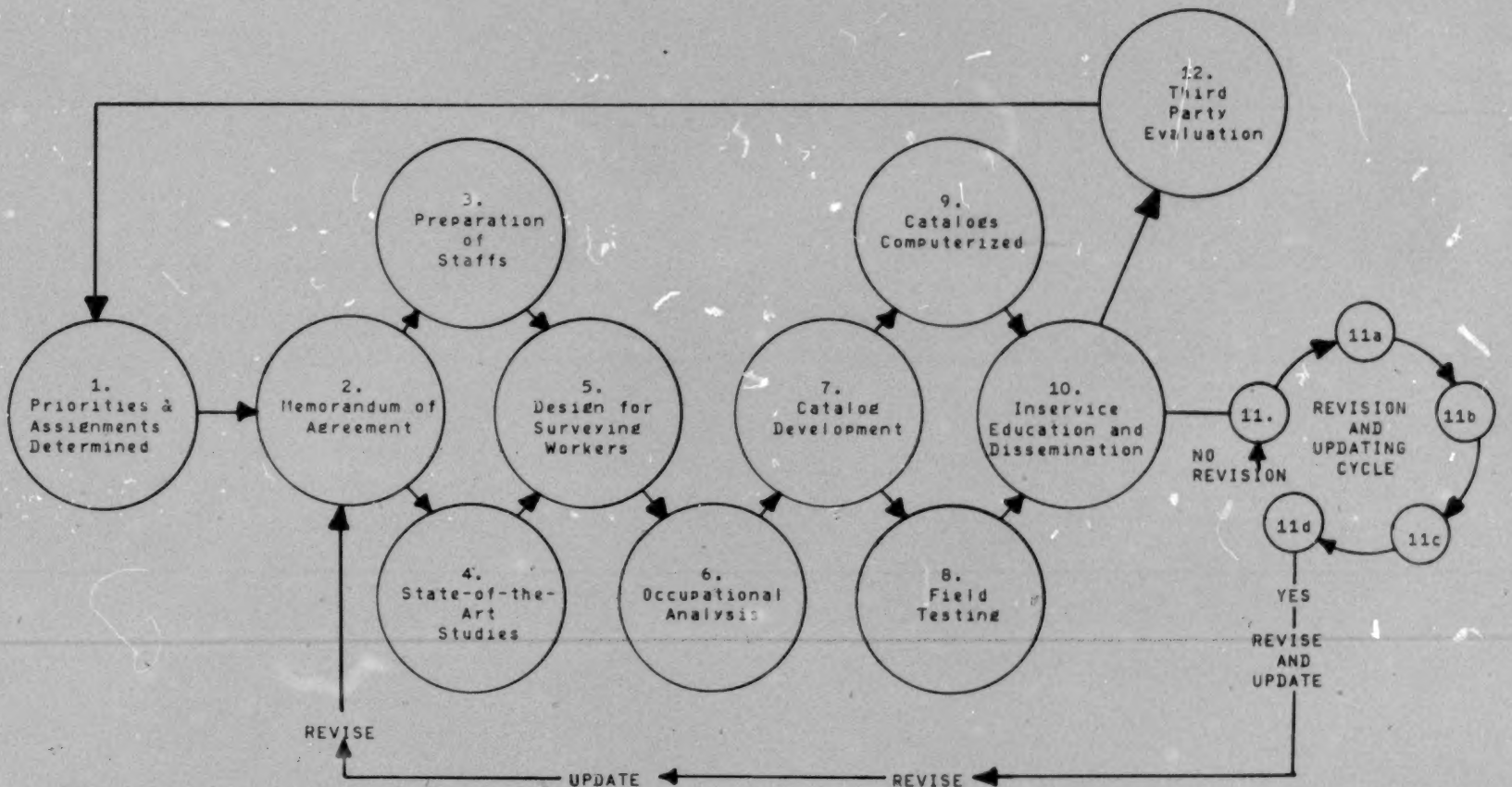

Figure 3.

V-TECS Model for Developing Catalogs of Performance Objectives and Criterion-Referenced Measures

B. Training of State Technical Personnel

As indicated earlier in this report, workshops are conducted by the V-TECS Central Staff which are designed to prepare the Technical Coordinators to fulfill their roles as quality control monitors of products. These workshops, conducted quarterly, provide in-depth training in all aspects of the V-TECS developmental model. While technical coordinators are the primary recipients of the instruction, each state is invited to send project personnel, thereby alleviating the training burden.

Since performance-oriented instruction is the ultimate goal of V-TECS catalog development, the topics covered at each Technical Coordinator Workshop are described in performance terms indicating the specific, desired learner outcomes. This enables each Technical Coordinator to be informed, prior to instruction, of the outcomes which each session is designed to elicit. Accompanying each performance objective are criterion-referenced measures, which are offered during and/or at the close of the instructional sequence. As a result of these procedures, each participant is progressively certified as being competent on each model activity involved in product development. After attending consecutive workshops, proficiency in all aspects of the model is gradually proven.

The basic resource for workshop training is the Technical Reference Handbook, developed by the V-TECS Central Staff. This handbook is a detailed "how to" guide resulting from experiences garnered over the first 2½ years of the Consortium's existence. An unexpected, auxiliary use of the Handbook has occurred within member states. Technical Coordinators find that it is a valuable tool (along with companion performance objectives and criterion-referenced measures) with which to conduct and evaluate training of project personnel within their states.

Workshop topics are selected to address the immediate concerns of the member states depending upon their stage of development along the 450-day timeline. Entry of new states into the Consortium has necessitated the need for a dual-track approach to instruction. Implementation of a dual-track approach allows the more experienced state personnel to attend sessions involving the latter stages of catalog development, whereby the relative newcomers attend

sessions involving the front-end of the developmental chain. This continues to be an effective procedure, and is well-received by participants.

C. Committee Structure of the Board of Directors

As stated earlier in this report, the V-TECS Board of Directors serves as the policy-making body for the Consortium providing advice, technical assistance, and direction to the V-TECS Central Staff. In this capacity, each Board member served on one or more ad hoc and/or standing committees to study concerns brought forth and recommend policy changes.

With the expansion of the Consortium and refinement of the procedures for catalog development, it was deemed appropriate to study alternative committee structures for maintaining efficient and informed decision making by the Board. In this regard, a new committee structure was adopted by the Board during its December, 1975 meeting that will allow for more specialization of the Board members.

Under the new committee structure, four committees of the Board of Directors were established to serve the functions previously delegated to the various ad hoc and standing committees. The four committees are the Executive Committee, Planning Committee, Product Development Committee, and Evaluation Committee. In addition, a Technical Coordinators Task Force was recommended by the Executive Committee and approved by the full Board to function through the Product Development Committee. These committees serve the following described functions and roles:

1. Executive Committee. The primary purposes of this committee are to periodically review the Bylaws of V-TECS and make recommendations for revision in keeping with the Articles set forth, review and interpret proposed and adopted policy changes in terms of their effect on the Bylaws, provide direction and advice in the preparation of prospective proposals, and to review personnel requirements and make recommendations on hiring new personnel.

2. Planning Committee. The primary purposes of this committee are to develop and recommend goals and objectives for the Consortium, and to develop and recommend plans for reaching approved goals and objectives. A goal is defined as a statement of a desired condition. Its purpose is to provide a means

for judging the appropriateness of objectives. An objective is defined as a statement of a condition which provides a quantifiable measure of progress toward a goal. This committee will use the results of the Delphi Technique discussed in section V of this report as a basis for refining the scope of their activities.

3. Product Development Committee. The primary purpose of this committee is to analyze and promote decisions concerning product development in regard to format, content, quality control, standards criteria, and dissemination/diffusion. This committee also serves as a clearing house for concerns expressed by the Technical Coordinators through their Task Force. The specific role of this committee is to develop the role and scope of the Technical Cooordinators Task Force, develop alternative methods of doing occupational analysis, and delineate alternative methods of delivery systems.

4. Evaluation Committee. The primary purpose of this committee is to recommend policies for the evaluation of each activity of the V-TECS activity model. The scope of this committee excludes primary responsibility for formative evaluation of the V-TECS products. However, the committee will provide continuous input regarding the status of each V-TECS model activity in terms of accomplishing stated model activity objectives. Specifically, this committee will examine and recommend the disposition of third party evaluation alternatives submitted by the V-TECS Central Staff, and assess the need for and recommend policy for internal evaluation of each activity of the V-TECS Model.

5. Technical Coordinators Task Force. This task force was established to provide a formal structure for obtaining feedback and technical input from the Technical Coordinators. In this way, "grass roots" information concerning the problems in implementing policies and procedures will be available to enhance the quality of decisions. The concerns of project personnel are brought to the task force through the individual state Technical Coordinators. This task force will meet jointly with the Product Development Committee and, thus, have assess to the full Board. However, this procedure is in no way intended to circumvent the prerogative of the Technical Coordinators to communicate directly with the state's Board Member.

The persons who make up the membership of these committees are identified in Appendix "D" (blue section) of this report. Board members were named to an appropriate committee on a volunteer basis (with the exception of those absent), whereas, the Technical Coordinators elected representatives from their ranks to serve on the Task Force.

D. Project Survey Results

Preliminary V-TECS occupational inventories and tool and equipment lists are developed from a thorough review of existing literature. These preliminary lists are refined and validated by extensive interviewing of incumbent workers and supervisors in the occupational area to be surveyed. The interviewing process ends only when workers and supervisors cannot add to the duties, tasks, tools, or equipment in the occupational inventory. Accurate inventories are a critical part of the occupational survey process and result in consistent data with higher reliability. The occupational inventories are then distributed in a tightly controlled sample design to randomly selected incumbent workers. The responses are processed by electronic data processing equipment. Information is collected on task time spent, task difficulty, job descriptions, equipment utilization, and cumulative task time spent by specific job title. Concurrently, results are analyzed statistically for reliability, variance, and deviation. Table 1 includes information concerning V-TECS survey data for 42 projects in terms of the state developing the project, project title, project number, sample size, overall response rate, usable response rate, and survey instrument reliability.

TABLE 1

Response Rate and Reliability by Project

PROJECT	STATE	SAMPLE SIZE	RETURN RATE	USABLE RATE	RELIABILITY COEFFICIENT	DOMAIN
1111	AL	172	67.9	62.8	.9244	AIR CONDITIONING
1112	AL	166	74.7	74.7	.9422	RADIO/TV
1120	AL	162	74.0	72.8	.8486	NURSERYMAN
1122	AL	140	90.7	90.7	.8672	AUTO PARTS CLERK
1123	AL	762	65.8	65.5	.9360	LICENCED PRACTICAL NURSE
1124	AL	138	87.7	87.7	.9184	ALTERATIONIST
1125	AL	166	86.8	86.8	.8528	COSMETOLOGY
1126	AL	136	79.4	79.4		BRICKLAYER
1220	FL	188	98.9	98.4	.7760	SOD PRODUCTION
1221	FL	196	87.8	87.8	.8732	AUTO BODY
1222	FL	237	99.2	98.7	.9227	TURF MANAGEMENT
1223	FL	208	99.5	99.0	.9434	AUTO MECHANIC
1236	FL	154	85.0	84.4	.9029	WELDING
1237	FL	156	100.0	100.0	.7950	FLORICULTURE
1238	FL	154	98.0	98.0	.8378	WARD CLERK
1239	FL	143	95.1	93.7	.9313	TAX COLLECTOR
1299	FL	126	86.5	86.5	.8926	HOUSING

TABLE 1 (continued)

PROJECT	STATE	SAMPLE SIZE	RETURN RATE	USABLE RATE	RELIABILITY COEFFICIENT	DOMAIN
1331	GA	190	90.5	90.0	.9532	DATA PROCESSING
1332	GA	190	72.0	68.9	.9451	MACHINIST
1343	GA	115	93.9	93.9		PROGRAMMER
1344	GA	142	77.5	77.5	.9501	EMERGENCY MEDICAL TECHNICIAN
1441	KY	166	67.4	66.3	.9424	DENTAL ASSISTANT
1442	KY	235	71.4	70.2	.9248	TRACTOR MECHANIC
1443	KY	208	73.4	72.6	.8221	CASHIER
1444	KY	226	84.4	83.2	.9690	CARPENTER
1445	KY	329	83.2	82.7	.8505	TELLER
1446	KY	166	86.3	85.5	.9125	CHILD CARE
1454	KY	181	67.9	65.7	.8476	LEGAL SECRETARY
1455	KY	144	72.9	72.9	.9350	MEDICAL ASSISTANT
1456	KY	132	81.1	81.1	.9238	DRAPERY
2095	LA	165	81.8	81.2	.9338	SHIP OPERATOR
1551	MS	180	86.1	85.5	.9272	PLUMBING
1552	MS	167	94.6	94.6	.9369	LANDSCAPING
1563	MS	152	62.5	54.4	.9092	COTTON GIN
1564	MS	165	86.1	86.1	.9152	INDUSTRIAL SEWING

TABLE 1 (continued)

PROJECT	STATE	SAMPLE SIZE	RETURN RATE	USABLE RATE	RELIABILITY COEFFICIENT	DOMAIN
1571	MS	148	96.6	96.6		HEALTH CARE WORKER
2132	SC	165	77.6	77.6	.9094	TEXTILE
2133	SC	148	80.4	80.4	.9239	SMALL ENGINE
1771	VA	576	87.8	87.8	.8480	SECRETARY
1772	VA	346	89.6	89.0	.8818	FOOD SERVICE
1788	VA	150	84.7	84.7	.8437	LOGGING
1789	VA	166	92.8	92.2	.9134	NURSE AIDE

TOTAL SAMPLE SIZE: 8518

TOTAL USABLE RETURNS: 7017

USABLE RETURN RATES: 82.238%

IV. PROJECT STATUS AND DISSEMINATION/ DIFFUSION PLANNING

The membership of V-TECS has undertaken 78 projects for the development of catalogs. As a result of these projects, occupational analyses of more than 280 job titles will be completed. This section of the report provides a listing of the projects completed and those currently under development, a discussion of the computer data banks maintained by V-TECS, and an overview of state plans for diffusion.

A. Project Completion Schedule

A total of 23 projects were completed as of the end of fiscal year 1975-76. Information concerning the states completing the projects, the project number, and the catalog occupational domain areas is provided in Table 2. Table 3 provides a listing of the 47 projects scheduled to be completed during the fiscal year 1976-77 and the estimated project completion dates. More detailed information concerning the actual job titles associated with the completed catalogs and the catalogs under development is included in Appendix "E" (ivory section) of this report.

A computer-based PERT network system designed to assist in improving project management has been refined and is now being implemented. Project time and cost data are being recorded for each V-TECS product leading to and including the final catalogs. An analysis of these data will aid in the identification of major cost centers, points of high and low human resource needs, and other similar types of product delivery information. Project personnel will be provided with data concerning average time and costs, including standard deviations, and suggestions for improvement and cost reduction.

TABLE 2

Vocational-Technical Education Consortium of States
Catalogs Completed by FY 1975-76

State	Project Number	Project Title
Alabama	1111	Air Conditioning
	1112	Radio/TV
	1120	Nurseryman
	1122	Auto Parts Clerk
	1123	Licensed Practical Nurse
	1124	Alterationist
	1125	Cosmetologist
Florida	1221	Auto Body
	1222	Turf Management
	1223	Auto Mechanic
	1238	Hospital Ward Clerk
Georgia	1331	Data Processing
	1332	Machine Operator
Kentucky	1441	Dental Assistant
	1442	Tractor Mechanic
	1443	Cashier/Checker
	1444	Carpenter
	1445	Teller
	1446	Child Care
Mississippi	1551	Plumbing
	1552	Landscaping
Virginia	1771	Secretary
	1772	Food Service

TABLE 3

Vocational-Technical Education Consortium of States
Catalogs to be Completed in FY 1976-77

State	Project Title	Estimated Catalog Completion
Alabama	Bookkeeper	8/76
	Bricklayer	10/76
	Cattle Rancher	4/77
	Travel Agent	6/77
Delaware	Sheet Metal	1/77
	Warehousing	2/77
Florida	Floriculture	10/76
	Tax Collector	9/76
	Housing Manager	8/76
	Dressmaking	6/77
	Medical Lab Assistant	6/77
	Building Inspector	6/77
Georgia	Programmer	7/76
	Electronic Technician	6/77
	Appliance Repair	5/77
Indiana	Agrichemical	6/77
	Drafting	6/77
Kentucky	Industrial Electrician	1/77
	Legal Secretary	9/76
	Medical Assistant	10/76
	Drapery Worker	9/76
	Floral Sales	11/76
	Agricultural Parts Clerk	10/76
	Appliance Sales	5/77

TABLE 3 (continued)

State	Project Title	Estimated Catalog Completion
Louisiana	Ship Operations	2/77
	Hotel/Motel Management	5/77
	Petroleum Technician	6/77
	Oilfield Technician	6/77
	Water Operator	6/77
	Patrolman	6/77
	Diesel Mechanic	6/77
Maryland	Executive Secretary	6/77
	Word Processing	6/77
	Janitor	6/77
Michigan	Security Guard	6/77
	Printing	6/77
Mississippi	Cotton Ginning	10/76
	Industrial Sewing	11/76
	Health Care Worker	2/77
South Carolina	Textile Production	9/76
	Small Engine Repair	10/76
	Business Machine Repair	5/77
Tennessee	Residential Electrician	6/77
	Cabinet Maker	6/77
Virginia	Logging	9/76
	Nursing Assistant	9/76
	Farm Equipment Operator	5/77

B. V-TECS Computerized Data Banks

Two data banks are being developed and maintained by V-TECS which provide rapid access by the use of a computer and/or computer terminal. The occupational information data bank and the catalog data bank are linked by a common file system using the computer, so that an infinite number of catalogs may be compiled with associated occupational data to meet the specific needs of a national, regional, state or local request. The two data banks may be accessed independently or in association. This capability provides V-TECS member states the potential of requesting catalogs as simple as they desire or as complex as necessary. It is believed that the complex catalogs with associated occupational survey data will be used by curriculum researchers, curriculum developers, and curriculum specialists to make the basic decisions regarding open entry/exit points, articulation of programs, and entry level job requirements in terms of the job and task specific performance objectives.

1. Occupational Data Bank. The occupational data bank consists of information collected from job incumbents by use of the survey instruments developed in each project. The information is collected by means of a comprehensive sampling of job incumbents using a computer generated list of random numbers. The data are coded and stored in the data bank by United States Office of Education (U.S.O.E.) and Dictionary of Occupational Titles (D.O.T.) classification. The V-TECS occupational data bank contains information concerning tasks performed by job incumbents, percentage of the members performing the tasks, relative time spent performing the tasks, job descriptions, relative task difficulty, difference between tasks performed by D.O.T., background demographic data, tools and equipment used by job incumbents, including the percentage and number utilizing tools and equipment by D.O.T. job title. V-TECS has developed a relative weighting of tasks in terms of the time spent and difficulty. These relative weightings will be expressed in stanine values from that task requiring the most time to that requiring the least time. This same range in terms of stanine values will be used for weighting tasks in terms of difficulty.

Also, V-TECS has developed a Bayesian Statistical Design that will rank tasks in terms of the four variables, time spent, task difficulty, members performing, and years on the job. This report is available to all members on special request.

New information and potential usage of occupational data are being studied on a continuous basis. This type of detail is designed primarily for those persons who conduct curriculum research and curriculum development activities.

2. V-TECS Catalog Data Bank. The catalogs of performance objectives, criterion-referenced measures, and performance guides are computerized by U.S.O.E. cluster and D.O.T. classification. The catalog data bank will be completely operationalized by July of this year. V-TECS will use the catalog data bank and occupational data bank in conjunction. The buffer file will provide the necessary interface for meeting individual needs and requirements. Catalogs will be stored and retrieved for the special requirements of various user groups in vocational education; i.e., curriculum researchers, program planners, curriculum developers, curriculum specialists, program supervisors, teachers, and other decision makers.

Revision and updating of the catalogs of objectives will be accomplished using the Cathode Ray Tube located in the V-TECS Central Office. Also, all catalogs that are retrieved from the computer will be printed according to Campbell's format (dissertation style) in camera-ready condition.

C. State Diffusion Strategies

V-TECS member states are increasingly recognizing the importance of and problems associated with diffusing catalogs within their educational zones. Based upon an analysis of Everette Rogers model, tentative guidelines were developed to provide a basic format for designing diffusion strategies. These guidelines were refined and approved by the V-TECS Board of Directors for use by the member states. Every member state has either developed or is in the process of developing a diffusion plan addressing the following stages:

a. Awareness
b. Interest
c. Trial
d. Evaluation
e. Acceptance or rejection

State diffusion plans are available for study by all members of the Consortium. As the plans are implemented, efforts will be made to evaluate costs and effectiveness. Methods employed in dissemination will be described, including

constraints and final solutions to specific problems. The result will be a sharing of strategies which have proven to be workable within a particular state's environment. Other states may then study these reports and modify their approaches as desired.

V. RESEARCH PROJECTS

Special research and demonstration studies are undertaken by V-TECS to address identified needs and opportunities relative to improved product quality and utility. The findings and results of these research efforts are used, where appropriate, to refine the overall functioning of the Consortium and to refine specific processes and procedures in catalog development and dissemination. Outside funds are sought to finance such research projects if the nature and scope of the problem so dictates.

Specifically, V-TECS recently completed a 21-month research project funded by the U.S. Office of Education (Vocational Education) and has submitted two proposals for consideration for FY 1976 funding under Part C of the Vocational Education Act of 1963 as amended in 1968. In addition, V-TECS is in the final stages of completing preliminary research for the development of a long-range plan. These research activities are described in more detail below.

A. Results of Project Grant Number O.E.G.-O-74-8581 by V-TECS for U.S.O.E.--(Vocational Education Research)

In January, 1974, V-TECS submitted a proposal to the United States Office of Education (U.S.O.E.) for FY74 funding under Section 131(a) of Part C of the Vocational Education Act of 1963 as amended in 1968. The project, entitled "A Project to Computerize Performance Objectives and Criterion-Referenced Measures in Occupational Education for Research and Determination of Applicability to Handicapped Learners," was funded for the period July 1, 1974 through March, 1976.

The project objectives were as follows: (1) To develop and refine the computer capabilities of V-TECS through development and documentation of new programs and systems, and development of a computer bank of performance objectives, criterion-referenced measures, and performance guides; (2) To test the feasibility of adapting V-TECS catalogs for use in occupational training programs for handicapped persons; and (3) To conduct a conference for persons having statewide responsibility for handicapped learners and curriculum developers in V-TECS member states concerning the scope and products of V-TECS and the results and implications of this research project.

An interim report detailing the progress made on the project during the first 12 months was prepared and submitted to U.S.O.E. in November, 1975. A final

project report including results, findings, and recommendations was prepared and submitted in May, 1976. A summary of the work completed to accomplish the stated project objectives is provided below:

1. Computer Systems Development. Data from the surveys of incumbent workers and the final catalogs completed to date by each V-TECS project are currently stored on disc. Standardized keypunching formats were developed and detailed instructions for the preparation and submittal of the necessary data decks were finalized and implemented. Computer software programs for generating 14 standard computer reports (based upon the survey data) and for generating special computer reports, as requested, were refined, documented, and implemented.

Arrangements were finalized with the University of Georgia's Office of Computing Activities to have access to an IBM 360-65, an IBM 370-158, and the Cyber 70. An IBM 3776 remote data processing terminal was installed in the V-TECS Central Office in Atlanta and is now operational. An IBM 3275 Cathode Ray Tube was also installed and checked out.

Approximately 80 percent of the required computer software was developed and implemented for storing and retrieving the final catalogs of performance objectives, criterion-referenced measures, and performance guides on-line using the cathode ray tube and/or computer printer. The remote job entry system will be fully operationalized by July of this year.

2. Feasibility Study of Applicability to the Handicapped. Feasibility studies for determining those performance objectives that are appropriate for and attainable by various target groups of handicapped learners were conducted in six V-TECS member states. Special committees, ranging in size from seven to twelve members, were established in each state composed of a handicapped worker where possible, a supervisor where possible, persons knowledgeable of the limitations and capabilities of handicapped learners, and persons knowledgeable of the occupation under study.

Standardized rating instructions and response forms were developed and provided. Each committee member was charged with the responsibility of rating each task in the selected V-TECS occupational inventory for attainability and difficulty and each performance objective in the associated V-TECS catalog for attainability by the selected handicapped target group. The usable returns as well as informal

feedback provided by the committee members, were analyzed and used to develop a recommended procedure for conducting future studies and for coding performance objectives relative to applicability for various handicapped target groups.

3. Project Conference/Symposium. A one-day conference/symposium for persons having statewide responsibility for handicapped learners, curriculum developers, and other interested persons was held in Atlanta on March 26, 1976. Representatives from each of the 13 V-TECS member states were invited to attend. A total of 22 persons attended representing 12 of the 13 V-TECS member states. During this meeting presentations were made concerning the overall scope, procedures, and products of V-TECS and concerning the results, findings, and recommendations emerging from the conduct of this project.

Based upon the research and development completed to accomplish the stated project objectives, it was concluded that (1) a remote job-entry system is an efficient and effective computer system to ensure rapid data access for generating routine and special reports, to type final catalogs using a cathode ray tube, and to permit on-line revision and updating of V-TECS catalogs; and (2) implementation of a committee approach to determine the applicability of V-TECS materials to various target groups of handicapped learners is a practical approach and is more effective when a detailed assessment is made of the standards and conditions specified in the performance objectives.

B. Proposals Pending by V-TECS to U.S.O.E.--(Vocational Education Research)

In January 1976, V-TECS submitted two proposals to the U.S. Office of Education for consideration in FY 1976 funding under Section 131(a) of Part C of the Vocational Education Act of 1963 as amended in 1968.

One of the proposed projects is entitled "A Project to Research Applied Diffusion Strategies for Performance-Based Instruction and to Refine Pre-Service and In-Service Technical Preparation Activities." The activities of this project address the critical need for designing practical diffusion strategies in performance-based instruction to aid in the refinement of current pre-service and in-service technical preparation programs.

The objectives of the proposed project are to analyze diffusion plans developed by the 13 member states of V-TECS, identify strengths and weaknesses

within these plans based upon experiences during implementation, and describe practical approaches for diffusing performance-based instruction through the development of a comprehensive guide. Accomplishment of these objectives would give those agencies contemplating use of criterion-referenced instruction, valuable insights into the potential effectiveness of various diffusion strategies as applied in a variety of organizational settings.

The second proposed project is entitled "Development, Application, and Refinement of a Model for Evaluating Cooperative Efforts in Performance Based Vocational Education." The objectives of the proposed project are to develop, apply, and refine a conceptual model for third-party evaluation of consortium efforts. The conceptual model will be applied to assess the overall functioning of V-TECS as a consortium effort. Refinement of the model will be based upon an analysis of follow-up data collected to determine the strengths and weaknesses of the conceptual model as applied.

Application of the conceptual model will provide evaluative information for use by V-TECS in improving the overall effectiveness and efficiency of the Consortium. The refined model can be used by others to assess similar cooperative efforts in performance-based vocational education. In addition, the generalizability of this model can be ascertained using the follow-up instruments and procedures developed by V-TECS.

C. Application of Delphi Technique for V-TECS Long-Range Planning

V-TECS recently completed a study to obtain information that will serve as the basis for the development of a three year long-range plan for the Consortium. The basic study design and instrumentation were formulated over a period of about 13 months. Planning was accomplished during regular meetings of the Board of Directors and through studies by the Central Staff. During a one and one-half day meeting of the Board and staff for this expressed purpose, a preliminary list of activities, goals and objectives was identified. It was agreed that a Delphi Technique would be used to further develop the goals, refine the objectives, set realistic time parameters, and establish a prioritized ranking. The panel or jury

of experts would consist of all members of the Board of Directors (including alternates) and the V-TECS Central Staff.

A total of four Delphi probes were administered in an attempt to obtain a concensus of opinion regarding the relative importance of the objectives and the sequencing of objectives. In developing the initial instrument, four major activities were identified as follows:

a. Improved Management of V-TECS;

b. Membership of V-TECS;

c. Long-Range Planning and Financing for V-TECS; and

d. Research, Development and Refinement.

For each activity, major goals and associated objectives were identified yielding a total of 68 objectives included in the first probe.

On Delphi Probe I, the respondents were instructed to edit any statements that were unclear; add additional activities, goals or objectives as deemed necessary and appropriate; and give each objective statement a relative value in terms of when it should be accomplished according to the following definitions:

S = Within a twelve (12) month period after completion of the long-range plan

M = Within a thirteen (13) to twenty-four (24) month period after completion of the long-range plan

L = Within a twenty-five (25) to thirty-six (36) month period after completion of the long-range plan

The response rate on probe I was 92 percent with 36 of 39 persons responsing. Based upon an analysis of the comments and suggestions, editorial changes were made, new goals and objectives were added, and some objectives were shifted and included under a more appropriate goal. The responses were assigned a value of 1, 2, or 3 (corresponding to S, M, and L) and processed by computer to obtain frequency counts.

Delphi Probe II contained a total of 100 objectives. The frequency counts on relative time (computed from responses to the first probe) were provided. Respondents were instructed to consider the frequencies previously obtained and, again, assign a relative time for accomplishment of each objective (including the

written-in objectives) and to rate each objective on relative importance by checking one of the following response categories:

- ☐ of extremely high importance
- ☐ of high importance
- ☐ of medium importance
- ☐ of low importance
- ☐ of no importance

In addition, respondents were instructed to write in additional objectives if desired. The response rate on probe II was 87 percent with 34 of 39 persons responding.

Based upon the comments and suggestions provided, five new objectives were added and two original objectives were combined with other objectives. In constructing Delphi Probe III, the responses to the second probe were first coded and computerized to obtain frequency counts. The responses on relative time were coded as before and the responses on relative importance were assigned a value of 5, 4, 3, 2, or 1 with 5 corresponding to a rating of "extremely high importance." Second, the objectives under each goal statement were grouped into Short, Medium, and Long-range categories by virtue of the most frequently marked response on Delphi Probe II. Then, within each category, the objectives were prioritized or ordered on relative importance based upon the highest rating received from probe II. Following this listing of objectives, the written-in objectives were included where appropriate yielding a total of 103 objectives on Delphi Probe III.

For each objective, the most frequently marked response on importance was indicated based on probe II results and the overall frequency count was provided. In addition, each respondent was given his or her rating on relative importance from probe II. Respondents were instructed to consider their response in light of the most frequently marked response, rate each objective on relative importance, and give a brief reason for holding a position different from the most frequently marked response. Respondents were also instructed to rate the written-in objectives on relative time for accomplishment and on relative importance. The response rate was 89 percent with 32 of 36 persons responding.

In constructing Delphi Probe IV, the procedure elaborated above was used to code the responses from probe III and categorize, order, and list the 103

objectives. A "comments document" was prepared to accompany this final probe. The document contained all comments provided on Delphi III, by objective, from persons who chose to maintain a rating either higher than (positive comments) or lower than (negative comments) the most frequently marked rating of relative importance. Respondents were instructed to carefully consider the comments provided, assign a final rating of importance for each objective, and provide any additional comments. The response rate was 94 percent with 34 of 36 persons responding.

V-TECS is currently in the process of summarizing the responses to Delphi Probe IV. The results will be provided to the Planning Committee of the Board of Directors for use in developing the three-year V-TECS long-range plan with assistance from the Central Staff as requested.

VI. INFORMATION FOR MEMBERSHIP IN THE VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES

A. Period of Membership

The V-TECS enrollment period begins on July 1 of each fiscal year and ends on September 30 of the same fiscal year. Interested applicants must file a letter of intent to join and complete the processing of the V-TECS membership form. Membership may not be accepted after the September 30 closing date, except with the approval of the Board of Directors.

B. Process for Membership

A letter requesting membership may be submitted at any time. If the membership is for the ensuing year, a letter should be submitted during the first month of the membership period. Any state requesting membership is entitled to an on-site visit by the Executive Director of V-TECS who will provide in-depth presentations with explanations and examples of the products of the Consortium. The visit is based upon an interest expressed in writing by the person designated in the state's Plan for Vocational Education as the State Director of Vocational Education. After written notification of the intent to join V-TECS, a formal agreement will be negotiated by the Southern Association of Colleges and Schools, Commission on Occupational Education Institutions, Vocational-Technical Education Consortium of States.

Upon completing and processing the agreement forms, the state is requested to name its member and alternative member to the V-TECS Board of Directors. For information concerning membership in V-TECS write:

Dr. Ben A. Hirst, Jr., Executive Director
Vocational-Technical Education
Consortium of States
Southern Association of Colleges and Schools
Commission on Occupational Education
Institutions
795 Peachtree Street, N.E.
Atlanta, Georgia 30308
Telephone: (404) 875-8011

APPENDIX A

BYLAWS OF V-TECS

THE VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES
FOR THE DEVELOPMENT OF CATALOGS OF PERFORMANCE
OBJECTIVES AND CRITERION-REFERENCED MEASURES
IN OCCUPATIONAL EDUCATION

BYLAWS

ARTICLE I.

Name.

The name of this organization shall be the VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES (V-TECS).

ARTICLE II.

Purposes and Objectives.

The purpose and objectives of V-TECS shall be to:

a. secure participation of divisions, departments, or bureaus of vocational-technical education in state educational agencies (or their appointed representatives) in cooperative efforts for the purpose of producing and exchanging catalogs of performance objectives and criterion-referenced exercises in occupational education;

b. develop, implement, and evaluate standard performance criteria to be utilized in the production of catalogs by each participating state to assure quality control and transportability of materials;

c. develop, implement, and evaluate a system for periodically updating and revising catalogs developed by member states;

d. secure additional technical or financial assistance from business and industry, other interested state or Federal agencies and educational foundations; and

e. promote the concept to performance-based education as a means of improving curricula and providing for increased accountability in occupational education.

ARTICLE III.

Membership.

Section 1. Membership in V-TECS shall consist of active membership and associate membership.

Section 2. "Active Membership". Any state educational agency (or its appointed representative) desirous of participating in the organization (participation being as submission of a letter of intent to, or a contract or grant for the member's proportional share of administrative costs including a commitment to develop or refine agreed upon catalogs) is entitled to become an active member of the organization.

Section 3. "Associate Membership". Any state, Federal or non-profit private agency desirous of participating in the organization (participation being defined as (1) a contract or grant for the member's proportional share of administrative costs, or (2) "in-kind" services consisting of the assignment of personnel, products and systems under development) is entitled to become an associate member of the organization, pending approval by a majority vote of the Board of Directors.

ARTICLE IV.

Board of Directors

Section 1. Number of Directors. The business, property and affairs of V-TECS shall be managed by a Board of Directors consisting of one person from each state designated an "active member." Each "associate member" of the organization will be encouraged to appoint one person to serve as a member of the Board of Directors. The Executive Secretary of the Commission on Occupational Education Institutions will also serve as a member (ex officio) of the Board of Directors. Directors representing "active members" will have voting privileges while Directors from "associate members" and the Executive Secretary, Commission on Occupational Education Institutions, will not have voting privileges.

Section 2. Membership on Board of Directors. Each active member state of V-TECS shall be authorized to have one voting member of the Board. The Board member shall be appointed by the State Director of Vocational Education (as iden-

tified in the current State Plan for Vocational Education). The State Director of Vocational Education shall also identify a person to serve as an alternate member of the Board of Directors.

Section 3. Qualifications of Directors. Each person serving on the Board of Directors should have experience in curriculum development, evaluation methodology or related research in Occupational Education.

Section 4. Power to Make Bylaws. The Board of Directors shall have power to make and alter any Bylaw or Bylaws, provided, that the Board shall not make or alter any Bylaw or Bylaws, fixing the qualifications, classification or term of office of any member or members of the then existing Board.

ARTICLE V.

Administering Agency.

Section 1. Administering Agency. An Administering Agency shall be retained by the Board of Directors of V-TECS to provide technical assistance and coordination of activities for the member states. The agency shall have regional or national visibility and the capability of developing broad-based contacts and alliances to the attainment of the organization's objectives.

Section 2. Financial Support of the Administering Agency. Each state participating as an active member of the organization shall assume a proportional share of the operational expenses of the Administering Agency. These expenses shall be established annually by the Board of Directors and shall be payable between establishment of intent to participate and November 30 of the appropriate fiscal year.

Section 3. Employment of Staff. The Administering Agency with approval of the Board of Directors will employ staff as required to fulfill the Consortium responsibilities. An Executive Director shall be employed to supervise this staff, implement policies of the Board of Directors, serve as secretary to the Board and be an ex officio member of all standing committees.

Section 4. Fiscal Accounting by Administering Agency. An annual audit of all monetary receipts and disbursements shall be made by the Administering Agency. This audit shall be made by a certified public accounting firm selected

by the Administering Agency and, upon receipt, shall be submitted to the Board of Directors for review and reaction.

ARTICLE VI.

Officers.

Section 1. Chairman. The Chairman shall preside over all meetings of the Board and shall see that recommendations and resolutions of the Board are carried into effect. In addition, he shall serve as chairman of the Executive Committee and shall be a member of the Planning Committee and serve as an ex officio member of all standing committees.

Section 2. Vice-Chairman. The Vice-Chairman shall perform the duties and exercise the powers of the Chairman during absence or disability and shall serve on the Product Development Committee.

Section 3. Parliamentarian. The Parliamentarian shall see that business meetings are conducted in a manner consistent with adopted parliamentary procedures and shall serve on the Evaluation Committee.

Section 4. Past Chairman. The Past Chairman shall serve on the Executive Committee in an advisory capacity.

Section 5. Election of Officers. The Chairman, Vice-Chairman and Parliamentarian shall be voting members of the Board of Directors and shall be elected annually by a majority vote of the Board. The normal rotation cycle shall be from Parliamentarian to Vice-Chairman to Chairman. The election of officers shall occur during the last regular meeting of each fiscal year. In the event of the inability of any officer to serve, the next officer in the rotation cycle will move to the next position and the Parliamentarian will be elected at the next regular meeting of the Board.

ARTICLE VII.

Meetings of the Board of Directors.

Section 1. Frequency of Meetings. Regular meetings of the Board of Directors of V-TECS will be held quarterly. Special meetings may be called by the Board Chairman or by a majority of the voting members of the Board.

Section 2. Notification of Meetings. All members of the Board of Directors shall be notified in writing at least twenty days prior to the meeting. The Executive Director of V-TECS shall inform the Board Members of the location and time of all meetings.

Section 3. Attendance of Meetings. All members of the Board of Directors shall be expected to attend regular and special meetings. In the event a member of the Board is unable to attend a meeting, the designated alternate board member from that state will serve as board member. The names of appointed board members and alternates will be submitted to the Chairman of the Board and the Executive Director of V-TECS at the first regularly scheduled meeting of the Board after that state becomes a member. Any change in the person appointed as board member or alternate shall be immediately reported in writing from the State Director of Vocational Education to the Chairman of the Board of Directors and the Executive Director of V-TECS.

Section 4. Number of Votes to Which Each Director is Entitled. At all meetings of the Board of Directors, each member state shall have one vote.

Section 5. Quorum at Director's Meeting. A majority of active members of the Board of Directors shall be necessary to constitute a quorum for transaction of business.

ARTICLE VIII.

Standing Committees.

There shall be four standing committees of the Board of Directors of V-TECS: Executive Committee, Planning Committee, Product Development Committee, and Evaluation Committee.

The membership of the Executive Committee shall be the elected officers, the Executive Secretary of SACS/COEI and the Executive Director of V-TECS. The membership of the Board shall be evenly distributed among the three remaining committees with committee appointments being made by the Chairman; except that the Chairman shall serve on the Planning Committee, the Vice-Chairman shall serve on the Product Development Committee, and the Parliamentarian shall serve

on the Evaluation Committee. The membership of each committee shall annually elect a committee chairman, except that Board officers shall not serve as Standing Committee Chairmen. At the direction of the Board of Directors, the Chairman shall appoint such other committees as deemed necessary.

ARTICLE IX.

Fiscal Year.

The fiscal year of the organization shall be from July 1 to the following June 30.

ARTICLE X.

Amendments to Bylaws.

Amendment Without Prior Notice. These Bylaws may be amended without prior notice by two-thirds vote of the attending Board members at any regular meeting.

APPENDIX B

BOARD OF DIRECTORS, ALTERNATES, AND TECHNICAL COORDINATORS OF V-TECS AND STATE DIRECTORS OF VOCATIONAL EDUCATION IN MEMBER STATES

VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES
BOARD OF DIRECTORS, ALTERNATES AND
TECHNICAL COORDINATORS IN MEMBER STATES

STATE	BOARD MEMBER	ALTERNATE	TECHNICAL COORDINATOR
ALABAMA	Miss Ruth Stovall, Branch Director Program Services State Department of Education State Office Building Montgomery, Alabama 36104 (205) 832-3285	Mr. James Kendrick Curriculum Specialist State Department of Education State Office Building, Rm. 855 Montgomery, Alabama 36104 (205) 832-3473	(Same as Alternate)
DELAWARE	Mrs. Rachel J. Schweitzer State Supervisor, Curriculum Research Department of Public Instruction Townsend Building Dover, Delaware 19901 (302) 678-4681	Mr. W. J. Kistler Curriculum Coordinator Paul M. Hodgson Vocational-Technical School 83 East Main Street Newark, Delaware 19711 (302) 731-2401	Dr. Patricia C. Stetson, Coordinator Occupational In-Service Education College of Education University of Delaware Newark, Delaware 19711 (302) 738-1198; 738-2573
FLORIDA	Dr. John F. Crittenden Bureau of Research, Dissemination and Evaluation Vocational-Technical Education Knott Building, Rm. 271 Tallahassee, Florida 32304 (904) 488-7695	Dr. Roy Giehls, Consultant Bureau of Vocational Research and Evaluation Knott Building, Rm. 254 Tallahassee, Florida 32304 (904) 488-8401	Dr. Wallace D. Hunter Technical Coordinator V-TECS Project Florida A & M University College of Education, Rm. 315 Tallahassee, Florida 32304 (904) 222-8030, Ext. 364
	Consultant: Dr. Kenneth M. Eaddy, Chief Bureau of Vocational Research & Evaluation Division of Vocational Technical and Adult Education Florida Department of Education Tallahassee, Florida 32304 (904) 488-3995		

STATE	BOARD MEMBER	ALTERNATE	TECHNICAL COORDINATOR
GEORGIA	Dr. Paul Scott, Director Occupational Research Coordinating Unit State Department of Education State Office Building, Rm. 250 Atlanta, Georgia 30334 (404) 656-2429	Dr. Gene Bottoms, Director Division of Programs & Staff Development Division of Vocational Education State Department of Education Atlanta, Georgia 30334 (404) 656-2556	Dr. Bettye Hirst Technical Coordinator State Department of Education State Office Building, Rm. 258 Atlanta, Georgia 30334 (404) 656-2566
INDIANA	Mr. Ed. Hornback, Coordinator Research & Exemplary State Board of Vocational & Technical Education 17 West Market Street Indianapolis, Indiana 46204 (317) 633-7673	Dr. Bill West, V-TECS Coordinator State Board of Vocational & Technical Education 17 West Market Street Illinois Building, Rm. 401 Indianapolis, Indiana 46204 (317) 633-7673	(Same as Alternate)
KENTUCKY	Dr. Bruce Carpenter, Director Competency Based Vocational Education Unit Bureau of Vocational Education Capital Plaza Tower Frankfort, Kentucky 40601 (606) 258-2797	Dr. Charles D. Wade, Director Program Development Division Bureau of Vocational Education Capital Plaza Tower Frankfort, Kentucky 40601 (502) 564-3775	Dr. Herbert Bruce, Jr., Director Curriculum Development Center 150 Taylor Building University of Kentucky Lexington, Kentucky 40506 (606) 258-4821
LOUISIANA	Dr. Harry Boyer, Acting Director Bureau of Vocational Education State Department of Education P.O. Box 44064 Baton Rouge, Louisiana 70804 (504) 389-2313	Dr. Merline T. Broussard State Department of Education P.O. Box 44064 Baton Rouge, Louisiana 70804 (504) 389-2313	(To be Named)
MARYLAND	Mr. Warren G. Smeltzer Assistant Director Division of Vocational-Technical Education Maryland State Department of Education BWI Airport, P.O. Box 8717 Baltimore, Maryland 21240 (301) 796-8300, Ext. 402	Dr. Robert E. Laird, Consultant Trades & Industrial Education Division of Vocational-Technical Education Maryland State Department of Education BWI Airport, P.O. Box 8717 Baltimore, Maryland 21240 (301) 796-8300, Ext. 421	Mr. William Michel, Staff Specialist Curriculum Development Division of Vocational-Technical Education Maryland State Department of Education BWI Airport, P.O. Box 8717 Baltimore, Maryland 21240 (301) 796-8300, Ext. 413

STATE	BOARD MEMBER	ALTERNATE	TECHNICAL COORDINATOR
MICHIGAN	Dr. Addison Hobbs State Director of Vocational Education Box 928 Lansing, Michigan 48904 (517) 373-3373	Mr. Philip Bailey Supervisor of Secondary Unit Vocational Education & Career Development Service Michigan Department of Education Box 928 Lansing, Michigan 48904 (517) 373-3365	Mr. Karl Stearns, Coordinator Capital Area Career Center Ingham Intermediate School District 611 Hagadorn Road Mason, Michigan 48854 (517) 676-1051, Ext. 300
MISSISSIPPI	Dr. James Wall, Associate Dean College of Education Mississippi State University Box 5365 Mississippi State, Mississippi 39762 (601) 325-5878	Dr. Kent Brooks, Technical Coordinator Research Coordinating Unit for Vocational-Technical Education Mississippi State University Drawer DX State College, Mississippi 39762 (601) 325-2510	(Same as Alternate)
SOUTH CAROLINA	Dr. Emily T. Owens, Chief Supervisor of Program Planning & Development Office of Vocational Education 904 Rutledge Building Columbia, South Carolina 29201 (803) 758-2482	Mr. L. L. Lewis, Director Office of Vocational Education State of South Carolina Department of Education 908 Rutledge Building Columbia, South Carolina 29201 (803) 758-3101	Dr. Robert T. Benson Vocational Instructional Materials Specialist 109 Freeman Hall Vocational Education Media Center Clemson University Clemson, South Carolina 29631 (803) 656-3491, 656-3115
TENNESSEE	Mr. Harold Gregory Chief of Curriculum Division of Vocational Education State Department of Education Cordell Hull Building Nashville, Tennessee 37219 (615) 741-2201	Mr. John Leeman, Chief Administrative Services Division of Vocational Education 205 Cordell Hull Building Nashville, Tennessee 37219 (615) 741-3446	Mr. James E. Judd Specialist I Curriculum Development Division of Vocational Education 214 Cordell Hull Building Nashville, Tennessee 37219 (615) 741-2201
VIRGINIA	Mr. L. M. Jewell, Jr., Coordinator Vocational Education Research & Statistical Information State Department of Education Richmond, Virginia 23216 (804) 786-2066	Dr. J. Dale Oliver Associate Professor of Education Division of Vocational & Technical Education Virginia Polytechnic Institute & State University Blacksburg, Virginia 24061 (703) 951-5237	(Same as Alternate)

STATE	BOARD MEMBER	ALTERNATE	TECHNICAL COORDINATOR
		ASSOCIATE MEMBERS	
U.S. NAVY	Dr. Worth Scanland, Deputy Director Research & Program Development Naval Education & Training Command Pensacola, Florida 32508 (904) 452-3466, 452-3467	Mr. John H. Pinning Career Development Naval Education & Training Command Pensacola, Florida 32508 (904) 452-2722	(Same as Alternate)
U.S. AIR FORCE	Lt. Col. Wade R. Kilbride Chief, Professional Relations Division Community College of the Air Force Randolph AFB, Texas 78148 (512) 652-4510	Capt. Dale F. Campbell Chief of Associates & Institutes Professional Relations Division CCAF/RLO Randolph AFB, Texas 78148 (512) 652-4510	TSgt. Steve Simonson Curriculum Advisor Community College of the Air Force Randolph AFB, Texas 78148 (512) 652-5029

STATE DIRECTORS OF VOCATIONAL EDUCATION IN PARTICIPATING V-TECS STATES

Dr. T. L. Faulkner, Director
Vocational, Technical & Higher Education
State Department of Education
State Office Building
Montgomery, Alabama 36104

Mr. Conrad C. Shuman, Director
Vocational Education
The Townsend Building
Dover, Delaware 19901

Mr. Joseph D. Mills, Director
Division of Vocational, Technical & Adult Education
State Department of Education
204 Knott Building
Tallahassee, Florida 32304

Dr. Russell S. Clark
Assistant State Superintendent
Department of Education
Office of Adult and Vocational Education
State Office Building
Atlanta, Georgia 30334

Mr. Don K. Gentry
State Director/Executive Officer
Board of Vocational & Technical Education
401 Illinois Building
17 West Market Street
Indianapolis, Indiana 46204

Dr. Carl F. Lamar
Assistant Superintendent for Vocational Education
State Department of Education
Capital Plaza Tower
Frankfort, Kentucky 40601

Dr. Harry Boyer, Acting Director
Bureau of Vocational Education
State Department of Education
P.O. Box 44064
Baton Rouge, Louisiana 70804

Dr. Daniel Dunham
State Director of Vocational-Technical Education
Maryland State Department of Education
BWI Airport, P.O. Box 8717
Baltimore, Maryland 21240

Dr. Addison Hobbs
State Director of Vocational Education
Box 928
Lansing, Michigan 48904

Dr. J. W. Lewis, State Director
Division of Vocational & Technical Education
P.O. Box 771
Jackson, Mississippi 39205

Mr. L. L. Lewis, Director
Office of Vocational Education
State Department of Education
908 Rutledge Building
Columbia, South Carolina 29201

Mr. Jonah L. Fitch, Assistant Commissioner
Vocational Technical Education
State of Tennessee
205 Cordell Hull Building
Nashville, Tennessee 37219

Ms. Marguerite Crumley, Acting State Director
Vocational Education
State Department of Education
Eighth Street Office Building
Richmond, Virginia 23216

APPENDIX C

V-TECS STAFF RESUMES

SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS

795 Peachtree Street, N.E. • Atlanta, Georgia 30308

Phone 875-8011 Area Code 404

NAME: Bob Eugene Childers

ADDRESS: 1128 Hess Drive
Avondale Estates, Georgia 30002

PHONE: (404) 284-2067

PRESENT POSITION: Executive Secretary
Commission on Occupational Education Institutions
Southern Association of Colleges and Schools

Responsible for directing the development and implementation of the SACS Program for improvement of post-secondary Occupational Education through the process of accreditation and for coordinating various research and evaluation activities to improve vocational-technical and career education.

Among other research efforts, Dr. Childers served as Project Coordinator for a special research project to develop and refine the computer capabilities of the Vocational-Technical Education Consortium of States and to study the feasibility of adapting the V-TECS catalogs for use in occupational training programs for handicapped persons. This project was funded in FY1974 by the U.S. Office of Education under Part C of the Vocational Education Act of 1963, as amended in 1968, and conducted as an integral part of the total V-TECS effort. 7/1/69 to present.

EDUCATION: Ed.D. Degree - University of Tennessee, Knoxville, Tennessee - 1964

M.A. Degree - Memphis State University, Memphis, Tennessee - 1959

B.A. Degree - Union University, Jackson, Tennessee - 1953

TEACHING EXPERIENCE:

United States Navy, Civil Service, Memphis, Tennessee from 1957 to 1960. Instructed Navy aviation officer personnel in the advanced systems of avionics including altimeter, fire control, guided missiles, radiological warfare, loran, and tacan. Instructed Navy officer personnel in English Composition, technical report writing, public speaking, and mechanical drafting. Developed publication material, courses of study, and lesson guides for the above areas for use of Naval officers in regular technical institute classes.

North Carolina State University, School of Education, Raleigh, North Carolina. Adjunct Professor from 1972 to present. Directed internship of four State Department of Education Fellows.

EXPERIENCE:

U.S. Office of Education, Director, Adult, Vocational, and Library Programs, Atlanta, Georgia. Served as Director of all programs administered by the Bureau of Adult, Vocational, and Library Programs for the six southeastern states in Region IV. 1966-1969.

State Department of Education, Nashville, Tennessee, Assistant Commissioner of Education for Vocational-Technical Education. Directed all programs of Vocational and Technical Education for the State. 1964-1966.

M.D.T.A. Programs, Athens, Tennessee, Director. Director in auto mechanics, machine woodworking, and office practices. Handled program development, purchasing, procurement, plans, employment, specifications, and operation of all programs. 1963-1964.

McMinn County Board of Education, McMinn County High School, Athens, Tennessee. Principal of 48-teacher comprehensive high school. Curriculum included Academic-General-Technical and Vocational course work for high school and adults. 1961-1964.

Bob Eugene Childers
Biography
Page Three

EXPERIENCE: (Cont'd)

Knox County Board of Education, Halls High School, Knoxville, Tennessee. Principal of 30-teacher school with general curriculum. 1960-1961.

U.S. Army Signal Corps, Ft. Bliss, Texas. Electronic Technician on electronic warfare equipment. Attended electronic technician school at Ft. Bliss for 18 months. Served in 192nd Signal Detachment.

Radio Corporation of American, Service Company, El Paso, Texas, Contract Instructor. Instructed U.S. Army enlisted personnel in advanced fire control systems and basic electronics. 1955-1957.

Southern Electro Plating Company, Memphis, Tennessee. Supervised crew of 30 men in thermostatic brazing process and electro plating. (Summer Work).

PROFESSIONAL ASSOCIATIONS:

National Association of State Directors of Vocational Education
American Technical Education Association
American Vocational Association (Life Member)
Phi Delta Kappa (Honorary Education Fraternity)
Iota Lambda Sigma (Honorary Industrial Education Fraternity).

OTHER ACTIVITIES:

Consultant to AVA's Publication Committee
Advisor AVA Vocational Education Standards Project
Member AVA Associate Committee-Chairman
Center for Occupational Education Advisory Council-Education Professor
Development Act Advisory Council - NCST
Veteran's Administration Advisory Council on Viet Nam Era Veterans
National Advisory Council on Part 211 EPDA for U.S.O.E.
Southern Nuclear Technician Project Steering Committee and SINB

Bob Eugene Childers
Biography
Page Four

OTHER ACTIVITIES: (Cont'd)	Steering Committee SACS Self-Study Advisory Committee for Training and Technology Project Oak Ridge Associated Universities
HONORS AND AWARDS:	Who's Who in South and Southeast Who's Who in American Education Who's Who in American Colleges and Universities Sigma Alpha Epsilon Social Fraternity - President Senior Class (Union University) - President

SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS
795 Peachtree Street, N.E. • Atlanta, Georgia 30308
Phone 875-8011 Area Code 404

NAME: Benjamin A. Hirst, Jr.

ADDRESS: 607 Fairfield Drive
Marietta, Georgia 30060

PHONE: (404) 973-0343

PRESENT POSITION:
Executive Director
Vocational-Technical Education Consortium of States
Commission on Occupational Education Institutions
Southern Association of Colleges and Schools

Responsible for directing the overall functioning of the Consortium and for supervising activities leading to the production and implementation of catalogs of performance objectives and criterion-referenced measures in occupational education. This involves working with the central staff; Divisions of Vocational Education in thirteen states; the U.S. Office of Education; the Air Training Command represented by the Community College of the Air Force; the Aerospace Education Foundation; the U.S. Naval Education and Training Command; representatives of business/industry/labor; and one national curriculum center.

In addition, served as Project Director for a special research project to develop and refine the computer capabilities of the Consortium and to study the feasibility of adapting V-TECS catalogs for use in occupational training programs for handicapped persons. This project was funded in FY74 by the U.S. Office of Education under Part C of the Vocational Education Act of 1963, as amended in 1968, and is conducted as an integral part of the total Consortium effort.
11/18/72 to present.

Benjamin A. Hirst, Jr.
Biography
Page Two

EDUCATION:

Ed.D Degree - University of Tennessee, Knoxville, Tennessee - 1974

M.A. Degree - Middle Tennessee State University, Murfreesboro, Tennessee - 1962

B.S. Degree - Middle Tennessee State University, Murfreesboro, Tennessee - 1959

TEACHING EXPERIENCE:

Visiting Lecturer, University of Tennessee, Middle Tennessee State University, University of Maryland, University of Florida, and Texas A & M University.

Guest Lecturer for American Welding Society.

Taught supplementary courses in blueprint reading and math to tool and die apprentices.

Taught university level graduate courses at the University of Tennessee.

Taught machine shop for three years, Decatur Schools, Decaturville, Tennessee.

EXPERIENCE:

Project Director and Principal Researcher. The position consisted of conducting feasibility research for the formation of a multi-state consortium. The research was reported in five sections for specific reasons. The project included the organization of a conference visitation of twenty-one state divisions of Vocational Technical Education. The results of this project formed the basis for the beginning of the Vocational-Technical Education Consortium of States (V-TECS). 11/72-6/73.

University of Tennessee, EPDA Doctoral Fellow. Selected as a National EPDA Fellow in March, 1971. 9/71-2/73.

University of Tennessee, Knoxville, Tennessee, Served a Research Internship with the Research Coordinating Unit for Vocational Education and taught courses in the Department of Industrial Education. 6/72-8/72.

Benjamin A. Hirst, Jr.
Biography
Page Three

EXPERIENCE: (Cont'd.)

State Department of Education, Nashville, Tennessee. State Coordinator Area Vocational-Technical Schools. Coordinated statewide system of twenty-eight Area Vocational-Technical Schools. Staff consisted of thirteen professional and twelve clerical workers. Total Annual Operating Budget--$9 million. Capital Outlay--$3 million. 1967-71.

State Department of Education, Nashville, Tennessee. State Director Area Vocational-Technical Schools. Directed statewide system of Area Vocational-Technical Schools, including staff of ten professional and ten clerical, and twenty-two superintendents. 1966-67.

State Department of Education, Nashville, Tennessee. Supervisor of Area Vocational-Technical Schools. Supervised facility planning, equipment specifications, and purchase of $22 million of equipment for twenty-two Area Vocational-Technical Schools. 1964-66.

AVCO Corporation, Nashville, Tennessee. Tool and Die Maker. 1959-62.

U.S. Navy, Machinist. 1952-56.

PROFESSIONAL ASSOCIATIONS:

American Vocational Association
American Vocational Education Research Association
American Welding Society (served as Officer, Executive Committee)
Kappa Delta Pi Education Honor Society
Phi Delta Kappa Honor Fraternity
National Society for Performance and Instruction

EVALUATION ACTIVITIES:

Served four-month doctoral internship from 8/19/72 to 12/15/72, the Commission on Occupational Education Institutions, Southern Association of Colleges and Schools.

Benjamin A. Hirst, Jr.
Biography
Page Four

EVALUATION ACTIVITIES: (Cont'd)

Served as Commission Representative on six evaluation teams and as an evaluation member on two re-visits to institutions seeking accreditation for the Commission on Occupational Education Institutions.

Chaired two workshops for prospective team chairman at the Annual Convention of the Southern Association of Colleges and Schools. 1970-71.

Member Standards Committee, Southern Association of Colleges and Schools, Commission on Occupational Education Institutions.

Chairman of four in-state evaluation teams in Tennessee.

Served as team member of the Southern Association of Colleges and Schools, College Commission.

Served as team member of two visiting teams with the Southern Association of Colleges and Schools, Secondary Commission.

Served as chairman of three evaluation teams and as a team member of one other visit for the Southern Association of Colleges and Schools, Commission on Occupational Education Institutions.

OTHER ACTIVITIES:

Selected as a national juror for the James F. Lincoln Award Foundation - Chicago, Illinois, 1970, 1973, 1975.

Received Distinguished Service Award from the American Welding Society for work while serving as Chairman of the Education Committee, 1970.

Received "Honorary Trouble-Shooter Award" from Chrysler Corporation in connection with work accomplished for the National Trouble Shooting Contest for automotive mechanic students.

Benjamin A. Hirst, Jr.
Biography
Page Five

OTHER ACTIVITIES: (Cont'd)

Currently serving as a member of the Georgia Teacher Education Council.

PUBLICATIONS:

1973	"An Approach to Developing Performance Objectives and Criterion-Referenced Measures in Occupational Education," Southern Association of Colleges and Schools.
1973	"A Status Study of Occupational Education Accountability, Performance Objectives, and Educational Consortia," Southern Association of Colleges and Schools.
1973	"A Tentative Agreement Form and Organizational Structure for a Multi-State Consortium to Produce Performance Objectives and Criterion-Referenced Measures in Occupational Education," Southern Association of Colleges and Schools.
1973	"A Report on Visits to the States and Agencies Interested in the Proposed Consortium and the Distribution of the Reports of the Project," Southern Association of Colleges and Schools.
1973	"Final Project Report - A Project for the Development of a Multi-State Consortium for the Production of Performance Objectives and Criterion-Referenced Measures in Occupational Education," Southern Association of Colleges and Schools.
1974	"First Progress Report for the Vocational-Technical Education Consortium of States," Southern Association of Colleges and Schools.
1974	"An Application of the Delphi Technique to Develop an Activity Model for the Vocational-Technical Education Consortium of States," published Disertation, Southern Association of Colleges and Schools.

PUBLICATIONS: (Cont'd)

1974 "A Consortium for Accountability," Technical Education Reporter, Vol. 1, No. 3, September-October, 1974.

1975 "Second Progress and Information Report for the Vocational-Technical Education Consortium of States," Southern Association of Colleges and Schools.

1975 "A Project to Computerize Performance Objectives and Criterion-Referenced Measures in Occupational Education for Research and Determination of Applicability to Handicapped Learners: Interim Report," Southern Association of Colleges and Schools.

SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS

795 Peachtree Street, N.E. • Atlanta, Georgia 30308

Phone 875-8011 Area Code 404

NAME: Tony M. Hinson

ADDRESS: 19P Laurelwood Apartments
Bentley Road, S.E.
Marietta, Georgia 30062

PHONE: (404) 454-5716

PRESENT POSITION: Technical Consultant
Computer Systems and Services
Vocational Technical Education Consortium of States
Commission on Occupational Education Institutions
Southern Association of Colleges and Schools

Responsible for designing and coordinating the overall statistical methodology and computer software and hardware system used by the Vocational-Technical Education Consortium of States (V-TECS). Maintains the operating efficiency of a remote job entry system between V-TECS and the University of Georgia Computer Center for on-line data processing. Directs the preparation of standardized computer programs, refines programs, writes special statistical computer programs, and compiles documentation on all computer routines and reports including detailed instructions for keypunching and data interpretation. Plans and organizes in-service training programs and seminars for V-TECS member states. Currently serves as Computer Specialist and Statistical Designer on a project funded in FY74 by the U.S. Office of Education under Part C of the Vocational Education Act of 1963 as amended in 1968. In this capacity, has primary responsibility for developing and implementing a system for storing and retrieving V-TECS catalogs to permit additional research leading to catalog revision and updating and other related statistical research.
8/15/74 to present.

Tony M. Hinson
Biography
Page Two

EDUCATION:

Ed.D. Degree - University of Tennessee, Knoxville, Tennessee - Vocational-Technical Education - 1973

M.S. Degree - Tennessee Technical University, Cookeville, Tennessee - Mathematics - 1968

B.S. Degree - Tennessee Technical University, Cookeville, Tennessee - Electronic Engineering - 1963

TEACHING EXPERIENCE:

Tennessee Technical University, Graduate Assistant, September, 1966, to June, 1968. Courses taught: Slide Rule; Algebra I, II, III; Business Mathematics I, II, III; and Trigonometry.

Columbia State Community College, September, 1968, to September 1969. Selected courses taught in the Electronic and Mathematics Departments: Computer Principles; Computer Logic and Circuitry; A-C Fundamentals; Microwave Theory; Trigonometry; R-F Receivers; Pulse and Digital Circuits; and Algebra.

Dyersburg State Community College, September, 1969 to September, 1971. Responsible for the design and development of the Computer, Electronic, Pre-engineering, and Mathematics Curricula and Programs in the Data Processing Department. This included writing the proposal for the curriculum and designing the proper data processing computer system that best met the administration and student objectives at DSCC (IBM 360 Model 25). In the Electronic, Pre-engineering, and Mathematics Departments, duties included writing the proposal for the program, designing the curricula, and the selection of texts, as well as ordering the equipment for all laboratories. Courses taught: Algebra; Pulse and Digital Circuits; Trigonometry; Slide Rule; Calculus; Computer Principles; Computer Theory;

Tony M. Hinson
Biography
Page Three

TEACHING EXPERIENCE: (Cont'd.)

Computer Fundamentals I and II; Fortran IV; RPG; Microwave Theory; Industrial Electronics; R-F Transmission Systems; Engineering Statics; Engineering Dynamics; Computer Logic and Circuitry; and D-C and A-C Fundamentals.

EXPERIENCE:

1973-1974: Winston-Salem/Forsyth County Schools, Winston-Salem, North Carolina. Director of Planning - responsible for management operations of the Department Planning. Specific duties included: site planning, liaison between staff members and architects, assisting department heads in the preparation of proposals, curricula, drafting schematic layouts, preparing and reviewing plans and specifications for new programs and facilities, conducting school planning research, providing field service assistance to areas with planning problems, interpreting the nature of educational programs, assisting department heads and principals in the preparation of equipment lists for various career educational programs. The Department of Planning focused on Career Education and Vocational-Technical Education Principles and Curricula. Foremost in the planning arena was a ($13 million) Career Center and the ($3 million) Vocational-Rehabilitation Center (both are presently under contract and construction, September, 1974).

1970-1971: Associate Engineering, Inc., Dyersburg, Tennessee. Consultant Engineer in the layout and design of subdivisions.

6/68-9/68: The Boeing Company, Huntsville, Alabama. Research Engineer on the S-II Stage of the Saturn V in the Vibration and Acoustic Research Branch. Responsibilities included analysis and evaluation of data (using data processing equipment) on the Saturn Flights Three, Four, Five and Six. This included all transducer measurements concerning mechanical vibrations and acoustics.

Tony M. Hinson
Biography
Page Four

EXPERIENCE: (Cont'd.)

Particular duties consisted of studying the data to determine the physical zones, position, type, model, range, value, and recording instruments needed for each measurement, as well as writing computer programs needed to control the instrumentation equipment and perform data analysis. Also, duties consisted of predicting the mechanical stress (vibration) and acoustic level for all transducer measurements and their locations on the S-II Stage of the Saturn V for the upcoming flights.

1963-1966: National Aeronautics and Space Administration, Marshall Space Flight Center, Huntsville, Alabama. Research Engineer.

9/63-8/64: Performed the duties of an instrumentation and measuring engineer and mechanical functions as related to static testing of missile components and scale model engines. These duties consisted of purchasing, installing, calibrating, operating and programming of the instrumentation systems. The instrumentation systems included graphic, oscillographic, magnetic and digital acquisition and conversion equipment, electronic signal conditioning circuitry, transducers, cable networks, calibrators, analyzers, analog computer systems, and two digital computer systems. These systems were used in order to record and analyze static and high frequency physical phenomena, such as pressure, flow and liquid quality, temperature, and heat flux, vibrations, acoustics, force displacement, relation and time. During the test operations of the vehical components observed, controlled, evaluated, and adjusted the measuring equipment for proper operation. After the test operations, the analysis of the data were completed by data processing equipment through the use of an IBM Computer System, as well as a SDS Computer System.

Tony M. Hinson
Biography
Page Five

EXPERIENCE: (Cont'd.)

8/64-1/66: Performed the duties as listed above, plus worked with senior instrumentation engineers in the design and development of better instrumentation practices and procedures. In February, 1965, chosen to be a member of the Mississippi Test Facility Activiation Team. From March, 1965, to January 1, 1966, worked at the Mississippi Test Facility as an Activiation Engineer. Duties consisted of the design and construction of the Data Handling Center, purchasing, installing, programming, and checking out all instrumentation equipment to be used by the Mississippi Test Facility at the Data Handling Center. The instrumentation equipment included, but was not limited to, a telementry system, magnetic tape units (wide band and high frequency units), a detail vibration system, the power analyst consultant on the design, purchase, installation, and check out of the three SDS Computer Systems.

1/66-9/66: Performed the duties listed above (especially those concerning the recording, evaluation, and data analysis of static testing of scale model engines), plus assigned the responsibility of a special measuring and instrumentation system. The computer system was the Hewlett Packard HP-2010C System. The major components of this particular system was a programmer, data linearizer, crossbar switches, digital recorders, A/D and D/A converters, counters, scanner control circuits, oscillators, and an intergrating digital voltmeter. Also, had responsibility for teaching fellow engineers the HP system design, computer language, logic, and electronic circuitry of various components of the data processing and instrumentation system.

Tony M. Hinson
Biography
Page Six

PROFESSIONAL ASSOCIATIONS:

Tennessee Vocational Association
American Vocational Association
Tennessee Education Association
Phi Delta Kappa Fraternity
American Institute of Electrical Engineers

OTHER ACTIVITIES:

Served as Chairman of the Southern Association of Colleges Evaluation Team - Maryville High School, Maryville, Tennessee - 1973.

Chairman of the Instruction Committee at Dyersburg State Community College - Dyersburg, Tennessee - 1961-1971.

Served on the Evaluation Team at Columbia State Community College - 1968-1969.

Served on the Evaluation Team at Dyersburg State Community College - 1970-1971.

EPDA Doctoral Fellow, University of Tennessee - September 1971 to December 1973.

Served one full quarter internship with Program Services, Department of Education, Division of Vocational-Technical Education, Nashville, Tennessee - 1973.

Served one five-week internship with the Knoxville City School System, Division of Vocational Education, Knoxville, Tennessee - 1973.

Served one six-week internship with the Research Coordinating Unit for the State of Tennessee, Knoxville, Tennessee - 1973.

Tony M. Hinson
Biography
Page Seven

PUBLICATIONS:

1975	"A Project to Computerize Performance Objectives and Criterion-Referenced Measures in Occupational Education for Research and Determination of Applicability to Handicapped Learners: Interim Report," Southern Association of Colleges and Schools.
1975	"Keypunching Format Guide for V-TECS Occupational Inventory Booklets," Southern Association of Colleges and Schools.
1975	"Procedures for Keypunching V-TECS Final Catalogs and Instructions for Filling Out the Cross-Reference Tables of Tasks and Performance Objectives," Southern Association of Colleges and Schools.
1975	"Second Progress and Information Report for the Vocational-Technical Education Consortium of States," Southern Association of Colleges and Schools.
1975	"Keypunhcing Format Guide for V-TECS Field Review Catalogs," Southern Association of Colleges and Schools.
1975	"Guidelines to Accomplishing V-TECS Task Difficulty Surveys," Southern Association of Colleges and Schools.
1973	"Guidelines for Using Electronic Data Processing in Community Colleges and Technical Institutions," an unpublished dissertation, University of Tennessee.
1968	"Determinants of Special Matrices," a problem published in the national magazine, The Mathematical Monthly, 1968.
1968	"Determinants of Special Matrices," an unpublished thesis, Tennessee Technological University.

SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS
795 Peachtree Street, N.E. • Atlanta, Georgia 30308
Phone 875-8011 Area Code 404

NAME: Billy J. Koscheski

ADDRESS: 650 Carlouetta Road, S.W.
Mableton, Georgia 30059

PHONE: (404) 948-9840

PRESENT POSITION: Technical Consultant
Product Development Services
Vocational-Technical Education
Consortium of States
Commission on Occupational Education
Institutions
Southern Association of Colleges and Schools

Provides staff assistance to members of the Vocational-Technical Education Consortium of States (V-TECS) in writing performance objectives and criterion-referenced measures, conducting workshops where required. Attends workshops on the management aspects of criterion-referenced instruction, advising member states and the V-TECS Board of Directors in this regard. Attends educational conventions, exchanging information on state-of-the-art in instructional system development. Coordinates all activities with other staff personnel to assure a well-planned operation. 9/1/74 to present.

EDUCATION: B.A. Degree - Park College
Parkville, Missouri - 1969.

Graduate of Workshop, "Criterion-Referenced Instruction: Analysis, Design and Implementation," conducted by Dr. Robert F. Mager & Associates. Completed course November, 1974.

Presently enrolled in a masters degree program at Georgia State University, Atlanta, Georgia.

Billy J. Koscheski
Biography
Page Two

EXPERIENCE: Curriculum Advisor, Community College of the Air Force, Randolph Air Force Base, Texas. Screened requests for curricular materials received from civilian institutions, identifying those portions of Air Force courses compatible with their needs. Requested appropriate training activities to transmit selected materials directly to the institutions. Served as Technical Advisor to the Vocational-Technical Education Consortium of States, assisting in the development of performance-based objectives and criterion measures. Briefed visitors on the curricular materials function of the Community College of the Air Force and the systems approach to training. Attended educational conventions, exchanging information on curriculum development and delivering presentations on the curricular materials dissemination effort within the Community College of the Air Force. 1973-74.

Instructional Programmer Technician, Hill Air Force Base, Utah. Conducted instructional system development workshops for teachers and administrators in the Utah Public School System. Analyzed education and training requirements in the Utah Public School System, then assisted in the development of behavioral objectives and criterion tests. Advised State Department of Education personnel as to those Air Force materials which would help attain the objectives, and secured a copy of same from the appropriate Air Force activity. Upon receipt, helped plan strategy in the implementation of those materials to obtain optimum results. 1971-73.

Instructional Programmer Technician, Headquarters Air Training Command, Randolph Air Force Base, Texas. Developed plans for the operational use of programmed learning. Provided advisory assistance, including written advice and briefings to visitors. Evaluated instructional materials

Billy J. Koscheski
Biography
Page Three

EXPERIENCE: (Cont'd)

as to their effectiveness in meeting specific objectives. Monitored reporting of programmed instructional materials in use and under development. 1967-71.

Instructional Programmer Technician, Medical Service School, Sheppard Air Force Base, Texas. Analyzed training methods, rewrote and recommended new training objectives where applicable, and developed instructional systems to meet those objectives. Conducted on-the-job training for office personnel, to include recommending them for skill level upgrading and associated personnel actions. Acted as Technical Advisor on classification boards involving instructional programming personnel, questioning the trainee and advising the Board as to his qualifications. 1964-67.

Instructor, Administrative Specialist Course, Amarillo Air Force Base, Texas. Instructed classes in the Administrative Specialist Course, teaching in the areas of Personnel Orders Preparation, English Usage, Typing, Preparation of Correspondence, Records Maintenance and Disposition, Requisitions for Publications, Office Procedures, etc. Recommended improvements in course materials, to include writing student study guides, workbooks, and test questions. 1960-64.

PROFESSIONAL ORGANIZATIONS:

Air Force Association
Air Force Sergeant's Association
American Vocational Association
Association for Supervision and Curriculum Development
National Society for Performance and Instruction

HONORS AND AWARDS:

Graduated Magna Cum Laude from Park College, Parkville, Missouri - 1969.

Billy J. Koscheski
Biography
Page Four

PUBLICATIONS:

1975 — "Second Progress and Information Report for the Vocational-Technical Education Consortium of States," Southern Association of Colleges and Schools.

1971-72 — The Utah Project, USAF Instructors Journal, Winter, 1971-1972, pp. 29-32.

1966 — Does Technique Tell the Story? USAF Instructors Journal, Spring, 1966, pp. 20-21.

1964-67 — Various instructional programs for the Medical Services School, USAF. Consisted primarily of programmed instructional packages (including objectives and tests) for medical laboratory and medical services specialists.

SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS
795 Peachtree Street, N.E. • Atlanta, Georgia 30308
Phone 875-8011 Area Code 404

NAME: Connie W. Lee

ADDRESS: 795 Peachtree Street, N.E.
Atlanta, Georgia 30308

PHONE: (404) 875-8011

PRESENT POSITION: Technical Consultant
Research Services
Vocational-Technical Education Consortium of States
Commission on Occupational Education Institutions
Southern Association of Colleges and Schools

Responsible for planning and conducting internal research studies, preparing research and other technical reports and proposals, assisting member states in conducting state-of-the-art research studies in selected occupations, and assisting in the design of the computer base maintained by the Vocational-Technical Education Consortium of States (V-TECS). Plans and organizes in-service training programs. Served as Research Specialist on twenty-one month project funded in FY74 by the U.S. Office of Education under Part C of the Vocational Education Act of 1963, as amended in 1968. In this capacity, designed and conducted a research study to determine the feasibility of adapting V-TECS catalogs for use in occupational training programs for handicapped persons. 11/15/74 to present.

EDUCATION: Ph.D. Degree - Ohio State University
Columbus, Ohio - Education - 1973

M.S. Degree - Ohio State University
Columbus, Ohio - Computer Science - 1969

B.S. Degree - Ohio State University
Columbus, Ohio - Math - 1969

TEACHING EXPERIENCE:

Ohio State University, College of Education. Assisted faculty members in teaching courses in elementary statistics, research design, and proposal writing to graduate students in education. Consulted with undergraduate students majoring in educational research and development and coordinated individual work-study experiences. 11/71 to 6/72.

Ohio State University, Division of Continuing Education. Taught courses in FORTRAN programming to adults enrolled in evening classes. 1/71 to 3/71.

Ohio State University, Computer Consultant. Consulted with Ph.D. candidates and faculty members on the statistical analysis of research data using the IBM 360 computer. Carried out computer analysis; analyzed and interpreted results; conducted seminars and lectures on computer applications in education with special emphasis on uses of Computer-Assisted Instruction (CAI), and wrote and installed introductory CAI programs to illustrate the concept. 7/69 to 8/70.

Ohio State University, Department of Computer and Information Science, Teaching Assistant. Taught introductory courses in FORTRAN programming to graduate and undergraduate students. 6/68 to 6/69.

EXPERIENCE:

The Center for Vocational and Technical Education, Columbus, Ohio, Research Specialist. Responsible for planning and conducting those evaluation tasks necessary to help assure and assess the quality of R&D products. This position required supervision of graduate research assistants and ability to work effectively with Research and Development program personnel. Had major responsibility for planning and conducting a nationwide field tryout to evaluate a manual developed for use by curriculum developers in constructing and using occupational task inventories. Wrote a request for proposal (RFP) for third-party evaluation of a set of performance-

EXPERIENCE:
(Cont'd)

based teacher education modules developed by the Center. Also wrote an Evaluation Plan for formative assessment of these modules prior to release to a third party. Supervised two professional staff members in conducting an evaluation of the "1973 National Training Fund: Instructor Training Program." Coordinated the development of program objectives, evaluation instruments, criterion-referenced tests and follow-up questionnaires. Served as interviewer for the study "Interpersonal Determinants of the Vocational and Educational Decision-Making Process of Black Adolescents." As Team Leader, administered tests and questionnaires to approximately 200 female sophomores at several Columbus high schools and conducted personal interviews with selected respondents.
1973 to 1974.

Ohio State University, School of Social Work, Research Associate. Member of a research team funded to evaluate the Franklin County "Public Assistance/Vocational Rehabilitation Project." This Project was designed to rehabilitate public assistance recipients and prepare them for employability. Had major responsibility for assisting the director in designing the research methodology. Assisted in the development of interview guides and conducted several hundred personal interviews, telephone interviews, and home visitations.
1972 to 1973.

Ohio State University, Fellow in the Regional Medical Program. The Regional Medical Program was an inter-disciplinary program conducted by the College of Medicine, the College of Education, and the Ohio State Regional Medical Program for Ph.D. students interested in medical education. Goals of the program were to provide exposure to health settings and to develop medical education specialists competent in the areas of managing and evaluating health programs, planning, researching, and diffusing. Experience included planning and conducting two workshops related to RMP needs, assisting in development of Computer-Assisted Instruction (CAI) continuing education programs,

EXPERIENCE: (Cont'd)

and conducting a needs assessment for the School of Nursing in the area of effective treatment of drug-abuse patients.
9/70 to 8/71.

North American Rockwell Corporation, Columbus, Ohio, Scientific Programmer. Prepared engineering problems for solution by computer. Analyzed and interpreted results for engineers. Programs written in FORTRAN IV for the IBM 7090 computer included an "Aircraft Inventory Program," a "Target Detection and Localization Program," and a "General Simulation Routine" that simulates aircraft missions.
1966 to 1967.

The Defense Construction and Supply Center, Columbus, Ohio, Management Analyst. Assisted in collecting data to review and analyze various Center operating systems. Analyzed and interpreted results and made recommendations on improving the system. Computer Programs written in the FORTRAN II language.
1965 to 1966.

PROFESSIONAL ORGANIZATIONS:

Pi Lambda Theta - National Honor and Professional
Association for Women in Education
American Education Research Association

PUBLICATIONS:

1976 — "Third Progress and Information Report for the Vocational-Technical Education Consortium of States," Southern Association of Colleges and Schools.

1976 — "A Project to Computerize Performance Objectives and Criterion-Referenced Measures in Occupational Education for Research and Determination of Applicability to Handicapped Learners: Final Report," Southern Association of Colleges and Schools.

1976 — "Development, Application, and Refinement of a Model for Evaluating Cooperative Efforts in Performance-Based Vocational Education," presented to the U.S. Office of Education, Washington, D.C. Southern Association of Colleges and Schools.

Connie W. Lee
Biography
Page Five

PUBLICATIONS: (Cont'd)

1975 "A Project to Computerize Performance Objectives and Criterion-Referenced Measures in Occupational Education for Research and Determination of Applicability to Handicapped Learners: Interim Report," Southern Association of Colleges and Schools.

1975 "Second Progress and Information Report for the Vocational-Technical Education Consortium of States," Southern Association of Colleges and Schools.

1973 "Evaluation Framework for Assessing Social Service Programs." Report to HJS and Associates, Columbus, Ohio, December 1973. (Collaborated with Charles J. Murphy and Howard J. Spiller).

1973 "Final Report: Instructor Training Program I." The Center for Vocational and Technical Education, Ohio State University, 1973. (Collaborated with Robert E. Andreyka).

1973 "A Comparative Study of Cost-Benefit Analysis Results Using Different Measures of Prior Earnings." Unpublished Ph.D. dissertation, Ohio State University, 1973.

1970 "Survey: Drug Abuse Program for Nurses." Report to the Regional Medical Program/Computer Assisted Instruction Project, December 1970. RMP/CAI Progress Report, 1970.

SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS

795 Peachtree Street, N.E. • Atlanta, Georgia 30308

Phone 875-8011 Area Code 404

NAME: LeRoy M. Netrick

ADDRESS: Box 2304, Mableton, Georgia 30059

PHONE: (404) 941-9330

PRESENT POSITION:
Technical Consultant
Statistical and Related Services
Vocational-Technical Education Consortium of States
Commission on Occupational Education Institutions
Southern Association of Colleges and Schools

Provides staff assistance to members of the Vocational-Technical Education Consortium of States (V-TECS) in sample design, data collection, and statistical design and analysis. Plans and organizes in-service training programs for the Technical Coordinators in each member state and agency so that uniform technical competence and procedures are applied to each V-TECS project. The relationship is that of technical assistance, problem solving, and inter-state project coordination. Coordinates all activities with other staff personnel to assure a well-planned operation. 10/29/73 to present.

EDUCATION:
M.A. Degree - Denver University, Denver Colorado - 1971

B.S. Degree - West Texas State University, Canyon, Texas - 1967

A.A. Degree - Amarillo College, Amarillo, Texas - 1965

Presently working on a dissertation to fulfill the requirements for a Ph.D. Degree at Georgia State University, Atlanta, Georgia.

LeRoy M. Netrick
Biography
Page Two

TEACHING EXPERIENCE: All teaching since June 7, 1967, has been in public schools and certified as either academic on teachers certificate or vocational on vocational certificate.

Military

Military Science and Tactics - 1950-1951
Mathematics - 1952-1954
Supply Accounting - 1957-1961
Management - 1961-1962
Teacher Training In-Service Training - 1962-1965

Counseling

Test and Measurement
Instructional Systems
Curriculum Planning
Graphic Design
Statistics
Technical Writing - 1965-1973

Civilian

Ceramics, Painting - 1957-1962
Lapidary - 1963-1966
Math, English - 1967-1968
Lapidary & Crafts - 1969
Shop Math
Statistics
Creative Writing
Industrial Art
Graphics - 1970-1973

EXPERIENCE: Field Consultant, Field Educational Publications, Inc., Palo Alto, California. Represented major publisher of educational materials, conducted many in-service training sessions for teachers in kindergarten through college, consulted administrators on public relations, budget, personnel management and student problems, advised on development of curriculum systems, PPBS, and the new accountability, hosted major educational meetings, and addressed professional organizations. 1973.

LeRoy M. Netrick
Biography
Page Three

EXPERIENCE: (Cont'd)

Teacher, program coordinator and coordinator of instruction for Southeast Metropolitan Board of Cooperative Services in Denver, Colorado. Consolidated the instruction in various programs and designed the proposals to secure accreditation and funding, coordinated SEMBCS Program and similar state programs through public relations, designed alterations in many districts. Did vast amounts of public relations and coordination work to sell people at all levels on the need for continuing educational programs. 1967-1973.

Instructor-Supervisor of the In-Service Training Branch of the U.S. Air Force. Supervised the operation of a school for the professionalization of USAF instructor personnel, coordinated and scheduled classes. Directed curriculum improvement, developed and implemented new and revised courses; advised students on career development. Has devised and written 23 courses in this period, maintained 100% production over a ten-year period, and served as Consultant on 1972 accreditation program in the area of statistics. 1961-1973.

Welder and draftsman in civilian life. Supply sergeant, supply instructor, math teacher, and teacher training instructor in United States Air Force. 1950-1961.

PROFESSIONAL ASSOCIATIONS:

Phi Delta Kappa Fraternity
American Vocational Association
Georgia Vocational Association
American Vocational Education Research Association
Colorado Association of Schools Executives

HONORS AND AWARDS:

Forty-Seven United States Air Force Instructor Awards
Top ten Adult Education Administrators Award (Statewide) - 1972
Graduated with honors in English at West Texas State - 1967

LeRoy M. Netrick
Biography
Page Four

OTHER ACTIVITIES:	Past President, Toastmaster's International Member of Several Art and Painting Societies
CERTIFICATION:	Teacher Certificates in Math, English, and Creative Writing Vocational Certificate in Graphic Arts Administrative Certificate at the Secondary Level.
PUBLICATIONS:	
1963	"Manual for Instructional System Development," United States Air Force.
1967	"Teaching Manipulative Skills," Colorado Department of Education.
1974	"Guidelines for Developing Job Inventory Task Booklets," Southern Association of Colleges and Schools.
1974	"Keypunch Format for Task Booklets," Southern Association of Colleges and Schools.
1974	"Keypunch Cross-Reference Manual," Southern Association of Colleges and Schools.
1975	"Second Progress and Information Report for the Vocational-Technical Education Consortium of States," Southern Association of Colleges and Schools.

APPENDIX D

MEMBERS OF THE COMMITTEES OF THE V-TECS BOARD OF DIRECTORS AND THE TECHNICAL COORDINATORS TASK FORCE

COMMITTEES OF THE V-TECS BOARD OF DIRECTORS

COMMITTEE MEMBERSHIP

Executive Committee

Dr. Emily Owens*
Dr. Bob Childers**
Dr. Ben Hirst**
Mrs. Rachel Schweitzer
Dr. Paul Scott
Mr. Robert Spillman (serves in advisory capacity)

Planning Committee

Dr. Worth Scanland*
Dr. John Crittenden
Dr. Ben Hirst**
Mr. Edgar Hornback
Mr. James Kendrick
Dr. Emily Owens

Product Development Committee

Mr. Philip Bailey
Dr. Ben Hirst**
Dr. J. Dale Oliver
Dr. Paul Scott
Mr. Warren Smeltzer
Dr. Emily Owens**

Evaluation Committee

Dr. James Wall*
Dr. Harry Boyer
Dr. Bob Childers**
Mr. Harold Gregory
Dr. Ben Hirst**
Lt. Col. Wade Kilbride
Dr. Emily Owens**
Mrs. Rachel Schweitzer

V-TECS TECHNICAL COORDINATORS TASK FORCE

TASK FORCE MEMBERSHIP

Dr. Wallace Hunter*
Dr. Robert Benson
Mr. James Kendrick
Dr. J. Dale Oliver
Dr. Bill West

*Chairman
**Ex Officio Member

APPENDIX E

ANALYSIS OF D.O.T. JOB TITLES

BY PROJECT, JULY, 1976

VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES

ANALYSIS OF D.O.T. JOB TITLES BY PROJECT

JULY, 1976

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
ALABAMA			
Air Conditioning & Refrigeration 17.0100	1111	637.281-010	A/C Mechanic, Commercial
		637.281-034	Refrigeration Mechanic, Commercial
		620.281-010	A/C Mechanic, Auto Svs.
		637.281-014	A/C Mechanic, Domestic
		827.884-014	A/C Installer, Domestic
Radio/TV Repairman 17.1503	1112	720.281-018	TV Service & Repairman
		187.168-138	TV Sales & Service Supv.
		823.781-018	TV Installer
		822.381-022	Equipment Installer
		720.281-022	TV Svs. & Repairman App.
		720.281-010	Radio Repairman
Nurseryman 01.0505	1120	406.168-010	Nurseryman
		406.884-010	Laborer, Nursery

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
ALABAMA (continued)			
Nurseryman 01.0505	1120	406.887-030	Nursery Worker
Bookkeeper	1121	210.388-022	Bookkeeper I
		210.388-026	Bookkeeper II
Auto Parts Clerk	1122	289.358-046	Sales Person, Parts
		289.358-060	Parts Clerk
		289.358-064	Parts Counterman
		289.358-068	Counterman, Automotive Parts
Licensed Practical Nurse 07.0302	1123	079.378-026	LPN
Alterationist	1124	785.281-010	Alterationist Tailor
		785.381-026	Seamstress, Alteration
Cosmetology 17.2602	1125	332.271-010	Cosmetologist
		331.878-010	Manicurist
		332.271-038	Managing Cosmetologist

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
ALABAMA (continued)			
Masonry 17.1004	1126	861.381-010	Bricklayer, Construction
		861.381-014	Bricklayer, Brick & Tile
Travel Agent	1131	D.O.T. To Be Assigned	
Cattle Ranching 01.0101	1132	413.181-010	Cattle Rancher
		413.884-018	Farm Hand, Livestock
		413.884-030	Ranch Hand
DELAWARE			
Sheet Metal 17.2305	3001	616.380-030	Set-Up Man, Sheet Metal
		616.380-034	Sheet Metal Fabricating Machine Operator
		804.281-010	Sheet Metal Worker
		804.381-026	Sheet Metal Lay-Out Man
Warehousing 04.1900	3002	922.887-060	Warehouseman
		929.887-050	Material Handler
		922.887-064	Stock Boy

Analysis of D.O.T. Job Titles by Project (continued

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
FLORIDA			
Sod Production 01.0506	1220	407.999-010	Sod Production Worker
Auto Body 17.0301	1221	807.381-010	Auto Body Repairman
		807.287-010	Shop Estimator
		845.781-018	Auto Painter
Golf Course Maintenance 01.0506	1222	407.883-010	Greenskeeper II
		407.137-010	Greenskeeper I
		407.138-010	Superintendent, Greens
Auto Mechanics 17.0302	1223	620.281-014	Mechanic, Auto
		620.381-014	Auto Svs. Mechanic
		620.884-010	Auto Mechanic Helper
Combination Welding 17.2306	1236	812.884-014	Welder, Combination
		812.884-010	Welder, Combination, Apprentice
		812.884-022	Welder, Repair

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
FLORIDA (continued)			
Floriculture 01.0502	1237	406.181-010	Flower Grower
		406.181-028	Flower Grower, Greenhouse
Hospital Ward Clerk 14.0499	1238	219.388-286	Ward Clerk, Hospital
		249.388-034	Medical Records Clerk
		237.368-018	Hospital Admitting Clerk
County Tax Collector 14.9901	1239	188.168-066	Tax Collector, County
		188.168-072	Deputy/Assistant Tax Collector
		188.168-014	Tax Collector Specialist
Housing Manager 04.1700	1299	188.168-028	Housing Manager
		189.168-044	Housing Management Aide
		184.168-112	Housing Maintenance Supervisor
		195.108-066	Social Service Supervisor
		188.168-036	Housing Occupancy Clerk
Dressmaking	1241	D.O.T. To Be Assigned	

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
FLORIDA (continued)			
Health Occupations 07.0203	1242	078.381-010	Medical Laboratory Asst.
		078.687-010	Laboratory Assistant, Plasma Draw-off
Public Service Occupations 17.2899	1243	168.168-010	Building Inspector
		168.168-034	Building Inspector, Residential
Homemaker	1244	D.O.T. To Be Assigned	
GEORGIA			
Data Processing 14.0201	1331	213.382-010	Digital Computer Operator
		213.138-010	Supervisor, Computer Operator
Machinist 17.2302	1332	609.885-022	Machinist
		600.280-034	Machinist, Apprentice
Programmer 14.0203	1343	020.188-026	Programmer, Business
		020.168-005	Chief Business Programmer

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
GEORGIA (continued)			
Emergency Medical 07.0907	1344	354.878-010	First Aid Attendant
		355.878-010	Ambulance Attendant
		355.878-026	Emergency Entrance Attendant
Electronic Technician 16.0108	1355	003.181-014	Electronic Technician
		828.281-022	Electronics Mechanic
		829.281-034	Field Engineer
Appliance Repair 17.0200	1356	827.281-018	Household Appliance Installation Man
		827.281-022	Household Appliance Repairman
INDIANA			
Agrichemical	3331	D.O.T. To Be Assigned	
Drafting	3332	D.O.T. To Be Assigned	
KENTUCKY			
Dental Assistant 07.0101	1441	079.378-010	Dental Assistant

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
KENTUCKY (continued)			
Tractor Mechanic 01.0301	1442	620.281-094	Tractor Mechanic
		620.884-050	Tractor Mechanic Helper
Cashier-Checker 04.0600	1443	299.468-010	Cashier-Checker
Construction Carpenter 17.1001	1444	860.381-026	Carpenter, Construction
		860.781-014	Carpenter, Rough
		860.381-030	Carpenter, Apprentice
Bank Teller 14.0105	1445	212.878-018	Teller
		212.138-026	Head Teller
Child Care 09.0201	1446	359.368-010	Child Care Attendant
		359.878-010	Child Care Assistant
Industrial Electrician 17.1002	1453	824.281-014	Electrician, Industrial
		829.887-014	Electrician, Industrial Helper
		829.887-016	Electrician, Industrial Repair

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
KENTUCKY (continued)			
Legal Secretary 14.0702	1454	201.368-010	Legal Secretary
		202.388-010	Court Reporter
Medical Assistant 07.0904	1455	079.368-022	Medical Assistant, General
		079.368-034	Medical Assistant, Administrative
		079.368-046	Medical Assistant, Clinical
Drapery Worker 09.0204	1456	299.488-010	Drapery Estimator
		785.381-250	Drapery Seamstress
		787.782-086	Drapery Worker
Floral Sales 04.0500	1457	142.081-050	Floral Designer
		260.458-010	Salesperson, Flowers
Agriculture Parts Clerk 01.0305	1458	185.168-090	Agriculture Equipment Parts Man
		185.168-092	Agriculture Equipment Parts Clerk

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
KENTUCKY (continued)			
Appliance Sales 04.1000	1461	278.358-030	Sales Person, TV and Appliance
		278.258-018	Sales Person, Hi-Fi
		278.358-010	Sales Person, Gas or Electrical Appliance
LOUISIANA			
Ship Operations 17.0802	2095	197.168-010	Master, Ship
		197.133-034	Tug Boat and Ship Mate
		911.884-010	Able Seaman
		197.130-014	Marine Engineer
		315.381-022	Cook, Ship
Hotel/Motel Management 04.1100	2096	187.118-030	Manager, Hotel
		187.118-034	Manager Motel
		187.168-094	Manager, Front Office
		211.468-034	Desk Clerk
		324.138-014	Bell Captain

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
LOUISIANA (continued)			
Petroleum Technician	2011	D.O.T. To Be Assigned	
Oilfield Technician	2012	D.O.T. To Be Assigned	
Water Operator 17.3203	2013	954.782-014	Water Treatment Plant Operator
		955.782-018	Sewage Plant Operator
		955.885-014	Water/Waste Water Operator
Police Operator 17.2802	2014	375.268-030	Patrolman
Diesel Mechanic 17.1200	2015	D.O.T. To Be Assigned	
MARYLAND			
Executive Secretary	3221	D.O.T. To Be Assigned	
Word Processing	3222	D.O.T. To Be Assigned	
MICHIGAN			
Law Enforcement 17.2802	3441	372.868-024	Security Guard

92

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
MICHIGAN (continued)			
Law Enforcement 17.2802	3441	372.868-032	Watchman
		372.868-036	Special Policeman
Printing Press 17.1902	3442	973.381-010	Compositor
		651.782-038	Offset-Duplicating Machine Operator
		979.381-014	Finisher
		979.381-012	Camera Copy
		651.782-042	Offset/Pressman
MISSISSIPPI			
Plumbing 17.1007	1551	862.381-074	Plumber, Construction
		862.381-082	Plumber, Maintenance
		862.381-088	Plumber, Apprentice
Landscaping 01.0504	1552	407.884-010	Groundskeeper
		407.181-010	Landscape Gardener
Cotton Gin 01.0402	1563	461.885-014	Ginner

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
MISSISSIPPI (continued)			
Industrial Sewing 17.3399	1564	789.132-010	Foreman, Sewing Room
		786.782-090	Sewing Machine Operator Regular
		786.885-034	Sewing Machine Operator Special Equipment
		787.782-290	Sewing Machine Operator All Around
Rural Health Worker 07.0906	1571	354.878-016	Rural Health Worker
		354.878-012	Rural Health Trainee
		354.878-020	Family Health Worker
		355.878-032	Nursing Home Worker
SOUTH CAROLINA			
Textile Production 17.3399	2132	683.130-014	Loom Fixer Overseer
		683.280-018	Loom Fixer
		683.380-014	Loom Changer
		684.280-010	Looper Fixer
		681.280-014	Machine Repairman

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
SOUTH CAROLINA (continued)			
Small Engine Repair 17.3100	2133	625.281-034	Engine Repairman
		625.281-042	Power Saw Mechanic
		625.281-032	Lawnmower Engine Repairman
		625.281-038	Outboard Motor Mechanic
Home Manager 09.0100	2144	D.O.T. To Be Assigned	
Business Machine Repairman 17.0600	2145	633.281-030	Office Machine Serviceman
		633.131-030	Office Machine Serviceman Foreman
		633.281-034	Office Machine Serviceman Apprentice
TENNESSEE			
House Electrician	3111	D.O.T. To Be Assigned	
Cabinet Maker	3112	D.O.T. To Be Assigned	
Homemaker	3113	D.O.T. To Be Assigned	

Analysis of D.O.T. Job Titles by Project (continued)

STATE AND PROJECT TITLE	PROJECT NUMBER	INCLUDED D.O.T.'s	
		D.O.T. Number	D.O.T. Job Title
VIRGINIA			
Secretarial 14.0702	1771	201.368-018	Secretary
		202.388-014	Stenographer
		203.588-018	Typist
		209.388-022	Clerk-Typist
Food Service 09.0203	1772	313.438-014	Head Cook
		313.381-018	Cook
		317.887-010	Cook, Helper
Logging 01.0703	1788	940.884-042	Woods Laborer
		183.168-030	Logging Contractor
		183.168-044	Logging Foreman
Nurse Aide 07.0303	1789	355.878-034	Nurse Aide
		355.878-038	Orderly
		355.878-040	Geriatric Aide
Farm Equipment Operator	1790	D.O.T. To Be Assigned	

CE 008 517